

# AIR TRAILS HOBBIES FOR YOUNG MEN

FEBRUARY 1955 / 35 CENTS

MODEL PLANES - BOATS - CARS • CAREERS • MECHANICS • MAGIC TRICKS •

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ALL THE  
SHOOTIN'  
ABOUT?

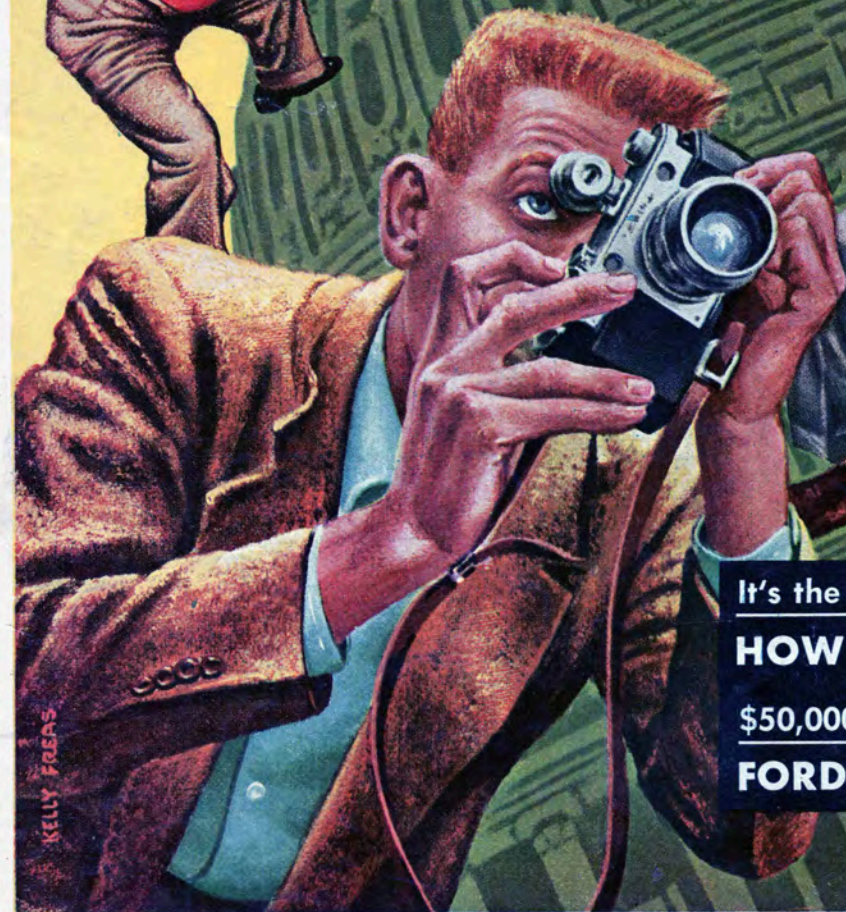
(See page 26)

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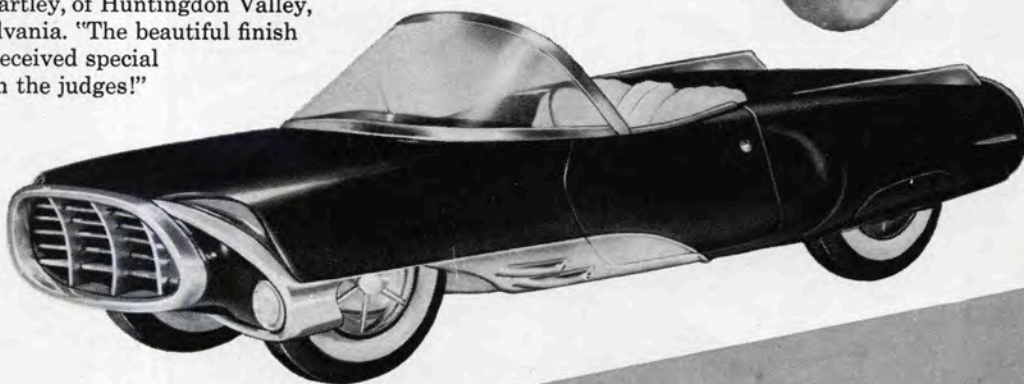


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### 'Namel Paint for All Plastics

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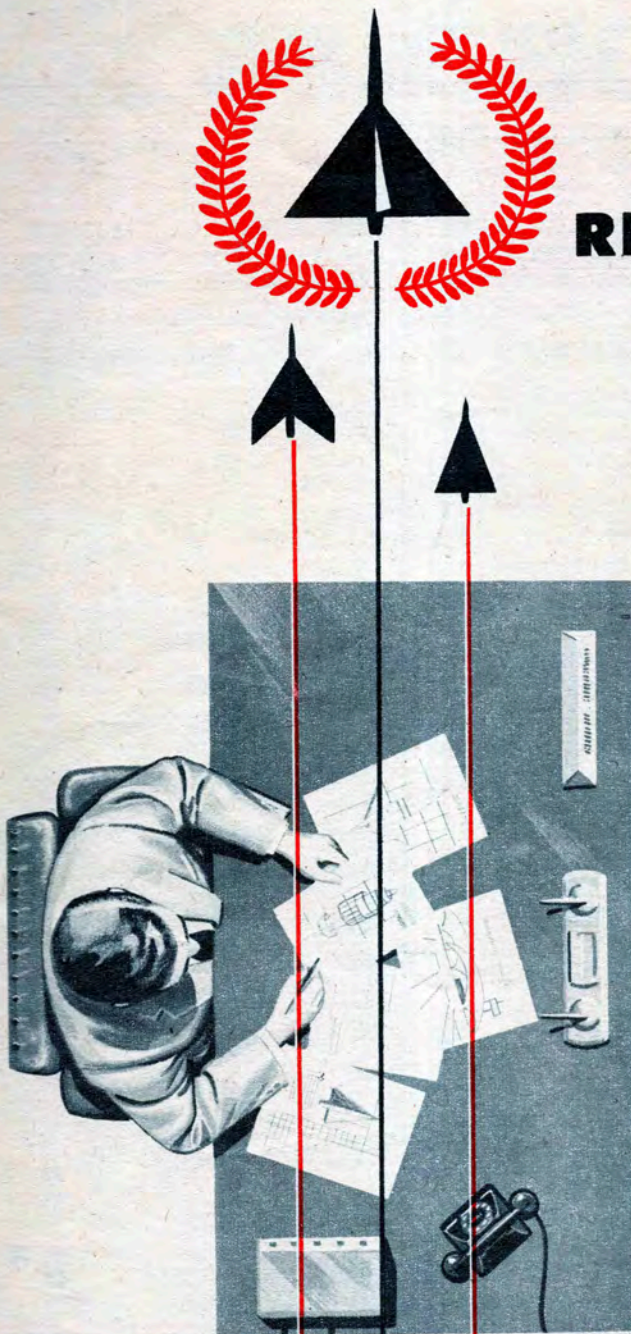
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# **PARKS COLLEGE OF SAINT LOUIS UNIVERSITY**

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Every year thousands of young fellows are off to Washington, D. C. and there every one tries to get a certain picture and most usually fail. Nothing so hard about it, either—if you know the secret. All is explained on page 26 through the help of Three Lions, the well-known photo agency. Our cover painting is by Kelly Fream.

## AIR TRAILS

## HOBBIES

## FOR YOUNG MEN

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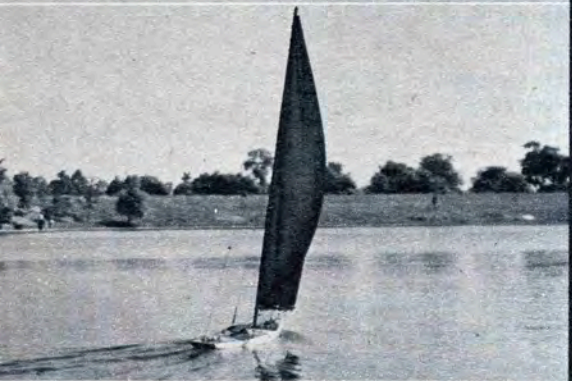
Editorial Offices Located at 304 E. 45th Street, New York 17, N. Y.



Cat ever get in the act before paint dried on your model? See pg. 28 for finishing plastics.



Isn't that a pretty sight? It's Hollinger's J-3 Cub on the water. Page 64 for float data.



Paul Jaworowski's Class M sailboat operates as Salisbury Model Yacht Club racer. See pg. 39.

Small, speedy, semi-scale P-51 radio control plane model—it's the Mini-Missile, page 48.



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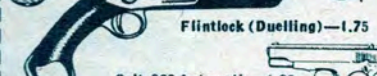


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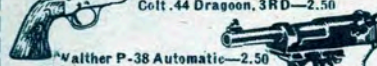
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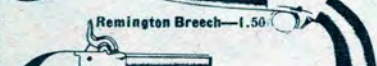
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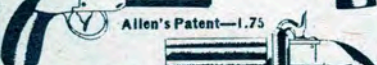
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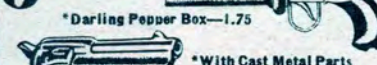
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is wingspan inches. CL-  
control line; PF—free flight;  
smb—small class B engine;  
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### CONTROL LINE SCALE MODELS

1 inch=1 ft. size; complete description  
Packet #10PP — FIGHTERS — All ABsmC:  
Hawker typhoon 38½; North Amer. Mustang P-51  
38½; Spitfire IX 37; Focke Wulf 190A3 34;  
Vought Corsair 38.  
Packet #12PP — FIGHTERS: Bell Kingcobra  
P-63 37½ ABsmC; Messerschmitt 109 32 ABsmC;  
P38 Lightning 52 BC; Hawker Tempest 34½  
ABsmC; Douglas Dauntless SBD 40 ABsmC.  
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Piper Sky-cycle 30; Johnson Rocket 31; Globe  
Swift 29; Ercoupe 30; Cul-  
ver V 29.  
Packet #15PP — NATIONAL  
AIR RACERS: Gee-Bee 25AB;  
Howard 180 30 lgBc; Pesco  
Soc. 25 BC.



### SCALE MODELS

5 PLAN PACKETS (32 Plans)  
in detailed ¼"=1 ft. Scale \$2

(includes 1PP-5PP)

### INDIVIDUAL PACKETS \$1

Packet #1PP—FIGHTERS: Lockheed Lightning  
P-38 13; Hawker Typhoon 10½; Focke-Wulf  
190A3 8½; Spitfire IX 9½; Vought Corsair P4U  
10½; DeHavilland and Mosquito 13½.  
Packet #2PP—FIGHTERS: Bell Airacobra P39C  
8½; Republic Thunderbolt P47 10½; Stormovik  
IL-2C 12½; Grumman Hellcat F6F 10½; Mitsub-  
ishi S-60 10; North Amer. Mustang P51 9½;  
Grumman Avenger TB7F 13½.  
Packet #3PP—FIGHTERS: Northrup Black Wid-  
ow P61; Hawker Hurricane 10; Hawker Tempest  
10; Bell Kingcobra P63 9½; Douglas Dauntless  
SBD 10½; Bell Airacomet P59A 12½; Messer-  
schmitt 109G18 8½.  
Packet #4PP—World War I FIGHTERS: Fok-  
ker D7 7½; Sopwith Camel 7; Fokker D8 7; Nieu-  
port 17C.1 6½; Spad 13C.1 6½; Albatross DVA  
7½; SE5a 6½.  
Packet #5PP — BOMBERS: Martin Marauder  
B-26 18; North Amer. Mitchell B25 17; Consol-  
idated Liberator B-24 27½; Avro Lancaster 26;  
Boeing Flying Fortress B17G 26.

SINGLE 25c PLANS 5 FULL SIZE PLANS \$1

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No. 1 3. The Hep Cat No. 3 4. Stahl's Corsair  
5. Curtiss Helldiver 6. Copperhead  
7. Tethered Trainer 8. The Bob Cat

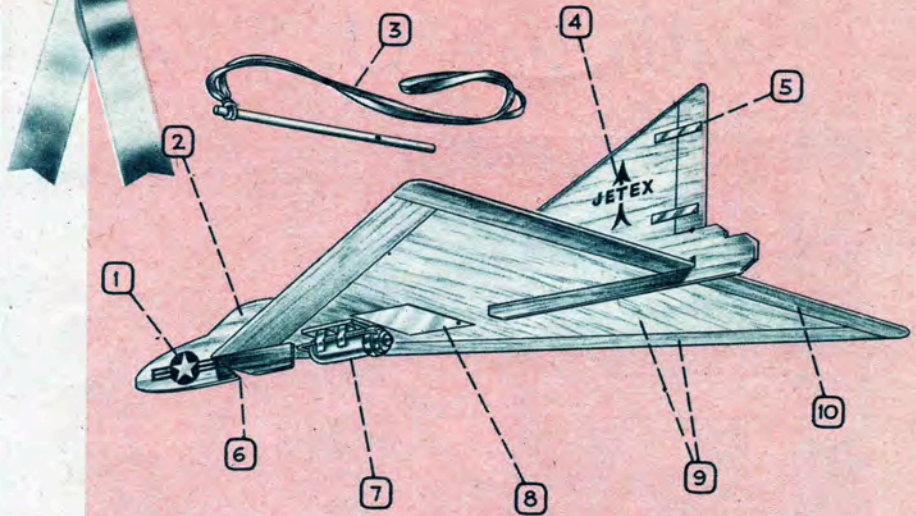
FOLIO 1. Pusher Pursuit 4. Gee-38  
No. 2 2. Culver Cadet 5. Halli Racer  
3. Hilli Special

POLK'S MODEL CRAFT HOBBIES

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AIR  
TRAILS  
HOBBIES

## Profile F-102

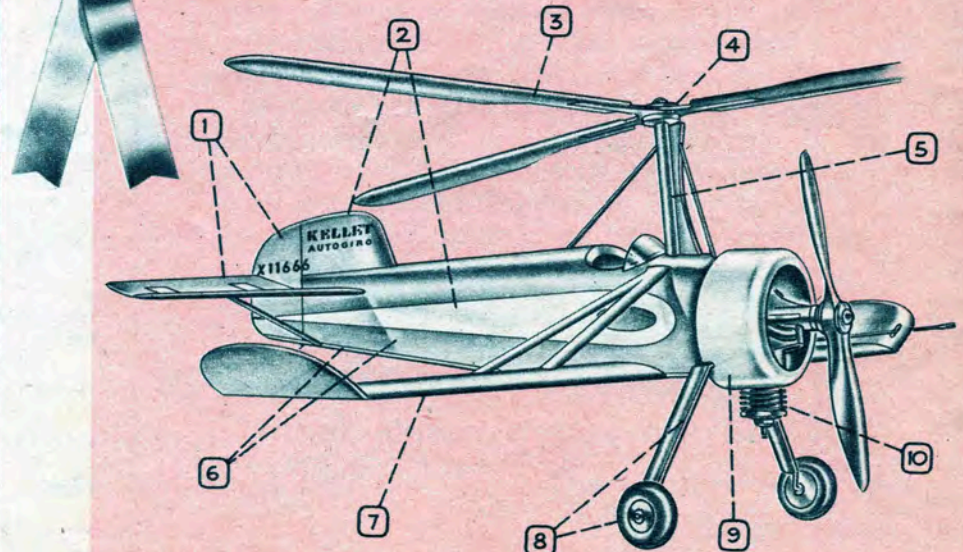


Kitted by American Telasco, Ltd., Huntington, N. Y., im-  
porters of Jetex engines and Jetex fuels, is this semi-scale Con-  
vair. Features include: 1) two-color decal insignia, 2) die-cut  
balsa profile fuselage, 3) catapult sling for test gliding and  
additional power boost, 4) decal decoration, 5) aluminum rudder  
hinges, 6) notch for catapult launching, 7) complete Jetex 50  
engine with fuel, mounting clip, etc., 8) blast shield, 9) die-cut  
sheet balsa wing parts, 10) adjustable balsa trailing edge strip.  
Plane is a real high-climber, has good glide.

Produced in kit form by Scientific Model Airplane Co.,  
Newark, N. J., this control-line autogiro has 18" wingspan.  
Points of interest: 1) die-cut balsa tail parts, 2) complete decal  
insignia and trim, 3) die-cut rotor blades, plywood center part,  
4) complete hardware for rotor bearing and control system,  
5) hardwood dowel rotor mast, 6) fully carved, hollowed balsa  
fuselage, die-cut bottom sheets, 7) shaped balsa wing, scored  
for tip dihedral, 8) formed steel wire gear, hardwood wheels,  
9) finished aluminum cowl, 10) .020-1074 cu. in. engines.

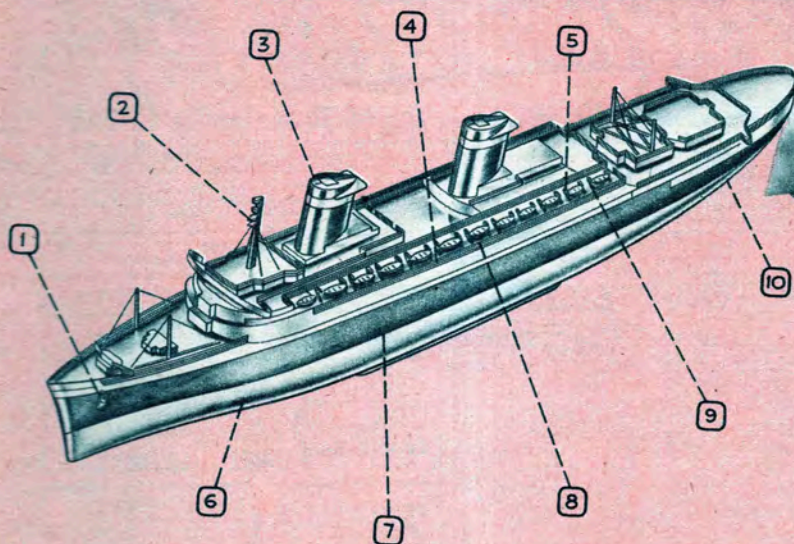
AIR  
TRAILS  
HOBBIES

## Kellett





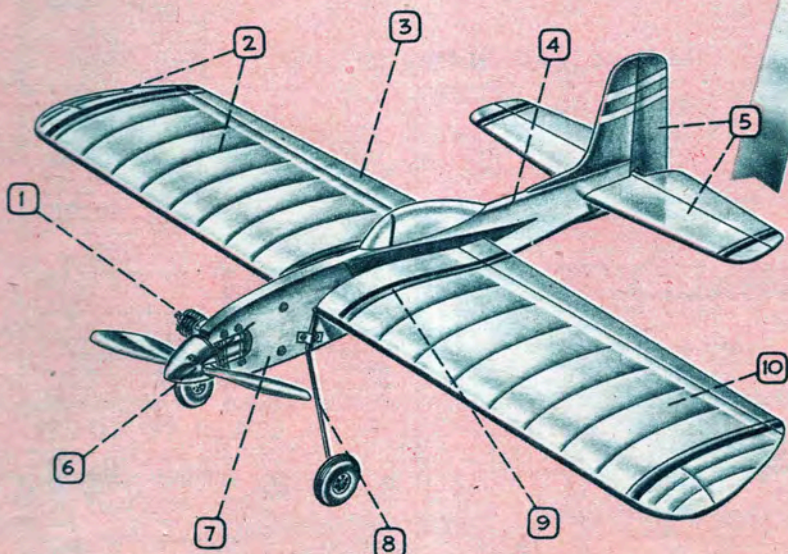
## "United States"



Prefabricated with 170 cast metal parts, scaled 1/48" to the foot, this 20½" detailed model of the "S.S. United States" is a product of Ideal Models, New York City. Note: 1) cast anchors and recessed fittings, 2) cast radar mast and fittings, 3) completely finished stacks, cast in halves, 4) detailed printed (white) plastic rails, deck sides, etc., 5) cast scale life boats and miscellaneous small fittings, 6) completely shaped balsa hull, ready for sanding, 7) color info, printed flags, 8) printed balsa decks, 9) winches, 10) scale housings.

Latest stunt design from Henry Engineering Co., Burbank, Calif., is this 40-in. wing span profile kit. Noteworthy features are 1) .19-.35 cu. in. displ. engines recommended, 2) die-cut balsa ribs, tips, etc., 3) balsa stationary flaps, 4) smoothly finished balsa profile fuselage, 5) die-cut balsa tail group, 6) hardwood engine bearers, 7) die-cut plywood fuselage doublers, 8) formed steel wire gear with attachment brackets, 9) completely detailed instructions for control system, 10) Silkspan wing covering material supplied.

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| BCR-4 Installation Kit complete .....                          | 3.50    |

### SINGLE CHANNEL R/C

FOR MODELS WITH 16 OUNCE LOAD - CARRYING CAPACITY.



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|   |         |
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| BCR-3 Receiver with tubes, relay, connector ..... | \$29.95 |
| BCT-2 Transmitter complete less batteries ..      | 39.95   |
| BCR-3 Installation kit ..                         | 2.95    |

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are most of the new items. Sometimes there isn't time or space to list all of them. But, if available anywhere, we

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| Wrecks 50" AA           | 3.91  |
| Wrecks 52" AA           | 3.91  |
| Wrecks 54" AA           | 3.91  |
| Wrecks 56" AA           | 3.91  |
| Wrecks 58" AA           | 3.91  |
| Wrecks 60" AA           | 3.91  |
| Wrecks 62" AA           | 3.91  |
| Wrecks 64" AA           | 3.91  |
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| Wrecks 86" AA           | 3.91  |
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| Strider 47" A-B-C           |       | 1.95  |
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| Strider Rudderless 62" A    |       | 6.95  |
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| Strider 56" A               | 54" B | 3.95  |
| Strider C Special 72" C     |       | 7.95  |
| Strider 58" E-C             |       | 4.95  |
| Strider 90" C-D             |       | 10.95 |
| Strider 108" D-E            |       | 17.50 |
| Strider Sedan 76" C         |       | 7.50  |
| Strider R/C Electric 46" AA |       | 4.50  |
| Strider 170 72" E-C         |       | 9.95  |

[illegible]

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| Wison 21" AA               | 1.95 |
| Wisco 33" B-C              | 1.95 |
| Wisco Cabin 12" AA         | 1.50 |
| Worhuff 17" AA-A           | 1.95 |
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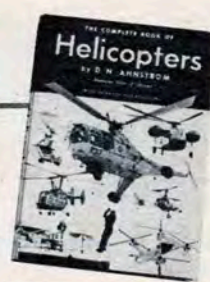
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Ceramic sculpture and pottery can be made without machines of any kind—everything being done by hand. The author takes the reader through the manual processes and then on to more intricate steps in the handling of tools, the manipulation of the kiln and the art of applying glaze.

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**The Complete Book of Helicopters** by D. N. Ahnstrom (The World Publishing Company, 2231 West 110th St., Cleveland 2, Ohio, 159 pages—\$4.95) is the fascinating story, told in full, of the first real flying machine—the helicopter.

Leonardo da Vinci in the early 1500s sketched a machine to fly rising vertically. Whether his models actually flew or not was not recorded by history but his observations left no doubt that some day someone would invent the right kind of engine to make the flying machine a reality.

The Wright brothers studied the existing helicopter models and realized that the mechanical difficulties would be stupendous. The practical Wrights were not afraid to solve problems but first and foremost they wanted to fly. Not too long after the successful flight of fixed-wing craft names like Berliner and Sikorsky and many others became synonymous with helicopters.

To many people the helicopter is a hybrid machine—half bird and half horse. Its flight is as delicate as that of a hummingbird yet it does the work of a horse, with its uses diversified and too numerous to mention. The author does take the reader on many of its occupations from radium deliveries to outlying hospitals, oil and uranium prospecting to whaling operations in the South Atlantic.

The chapter on "How They Fly" is a must to anyone interested in 'copter piloting. Detailed explanation and illustrations describe each factor governing the ship's movement as well as the meaning of "torque" and the use of the tail rotor for anti-torque action.

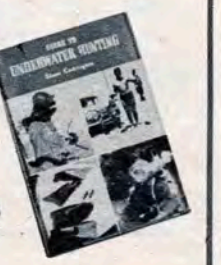
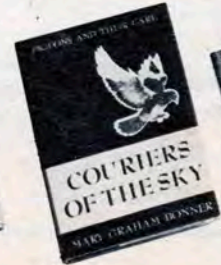
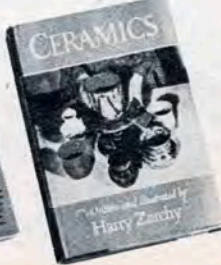
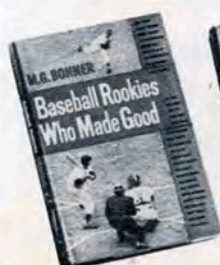
Today with a Belgian airline using Sikorskys for international passenger service, the helicopter has come into its own. For the reader interested in this relatively new field of aviation here is a book that gives a complete history of helicopter development, detailed information and illustration of its flight and a directory of schools that teach helicopter piloting today.

**Guide to Underwater Hunting** by Simon Codrington (John de Graff, Inc., 64 West 23rd Street, New York 10, N.Y., 80 pages—\$1.75) is a valuable handbook to the newest and fastest growing sport today—underwater swimming and hunting.

The author, an expert in underwater swimming and hunting, has written this volume as a guide to the newcomer in the sport. The suggested equipment basically is the face mask, rubber flippers and breathing tube. For the hunter several types of guns are described with their advantages and disadvantages, and for the more proficient who will want to dive deeper and stay down longer there is the Aqualung.

The chapter on different hunting techniques and the hazards of the neophyte picking on a fish his own size is interestingly written.

**Couriers of the Sky** by Mary Graham Bonner (Alfred A. Knopf Inc., 501 Madison Ave., New York, N. Y., 86 pages—\$2.50) is a simple, practical guide for anyone, young or old, interested in raising pigeons for (Continued on page 57)





# TRICK PIX® . . . CASH IN WITH YOUR CAMERA



The shocked expression on the faces of the saintly eggs is undoubtedly due to the fact that they found an evil outsider in their midst, no one else but old man Lucifer in person. Photo submitted by Robert Gilley of Lakeland, Florida, won \$25 prize.



How large can they get? Control-line models have been getting bigger and bigger, but this one takes the cake. The young lady grabbed a handful when she set out to fly this yo-yo full-size Aeronca. Photo by Marjorie Hutcheon, Hermosa Beach, Calif.

## HOW TO WIN "TRICK-PIX" CASH

\$25 cash award for each trick picture used here. Submit as many different entries as you wish; none should be less than 4 by 5 inches, and preferably 8 by 10 in. glossy prints. We will return all photos submitted but cannot accept responsibility in case of loss or damage.

Pictures may be of one-dimensional subjects (people, inanimate objects, cartoon-caricatures, etc.), or can be tabletop full-dimensional scenes. Amateur and professional photographers stand an equal chance. Keep the subjects humorous and/or unusual.

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41" span. U Control B or C Motor. Scale model of 1949 Thompson Trophy winner. Set has 2 1/2" scale rubber tired alum. disk wheels, 4 1/4" aluminum cowls, body planking, moulded, clear plexiglas cockpit enclosure, plastic spinner, etc. This is one of the finest equipped models in the world. Const. set .....\$7.00

## OTHER GAS MODELS

56" Rearwin De Luxe Set.....12.50  
48" Curtiss P40F Set.....9.00

## REPUBLIC P47D GAS MODEL



35 1/2" span, 7/8" scale. Length 30 1/2". One-piece moulded, clear plexiglas cockpit enclosure. 2 1/2" scale alum. disk rubber wheels. Body planking full size plans. Uses B or C motor. \$5.95  
Set .....

## 9' TAYLOR CRAFT GAS MODEL



9 foot Span. Can use Radio control. Set has 36 ready cut wing ribs, cut plywood body formers, 16" carved prop, tail wheel unit. 2 full size plans, printed balsa, silkspan, etc. Uses "C" type motor, single, twin, or 4 cyl. motor. Set without \$17.50  
motor or wheels postpaid.....  
Extra pair of 4 1/2" airwheels, \$2.50

## NORTH AMERICAN B-25 GAS



67" Span. 1" Scale. Free flight or radio control. Set has two 4 1/4" alum. cowls, scale rubber tired Veco wheels, planked type body, full size drawing, etc. Model uses two "19" or "23" motors. Const. \$20.00  
Set, less motors.....

## Curtiss 11C4 N. American B-25



32" span. 1" scale. Const. set. Rubber driven...\$4.50



33 1/2" span. 1/2" scale. Const. set. Rubber driven...\$4.00

## Grumman-F3F1



32" span. 1" scale. Const. set. Rubber driven...\$4.00

## Elf 4-Cyl. Gas Motor



Elf 1-3 h.p. 4 1/4" wide. Price .....\$49.50

## BOEING PT17 GAS



45" Span. Can use 5 cyl. M5 motor to scale or B or C type motor. U control. Set has scale rubber wheels and all spec. parts. Ready cut wing ribs, tail wheel unit and wheel. Const. set.. \$9.95

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# Rocket Trails®

**Rockets, Guided Missiles and Space Ships**

**By G. HARRY STINE**

**White Sands Proving Ground**

**Space Flight, When?** The first question anyone asks a rocket man is, "When will we have space flight?" Several authorities have given their estimates, ranging from ten to a hundred years from now. But most rocket men realize that these are prejudiced answers to a loaded question. Space flight is coming, all right; but many factors will enter into the amount of time required for us to solve the problems still before us.

Just as it is impossible for a research scientist to sit down and write up a day-by-day schedule of his experiments for the next six months, so it is equally as difficult for the rocketeers to give a concrete answer about when they will get a satellite in orbit.

If an all-out effort were started today with unlimited funds available, we could perhaps get a manned vehicle into orbit in ten years . . . provided we found quick solutions to such problems as reliability. But no all-out effort seems likely; even today only a very small percentage of the national defense appropriation is being spent on rocket and guided missile research. However, if such a program was undertaken, the public would not hear of it until they saw the satellite star go overhead; it would be kept a tighter secret than the Manhattan District.

How long it will take us to get into orbit by nibbling away at the problems is a good question. Anybody's guess is as good as any other's. More and more people are beginning to share the dream of space flight every day, and it is certain to be accomplished. Man will certainly have ventured into space before 2000 A.D., and we are probably being extremely conservative in that estimate.

It seems likely to the rocket men that space flight will be accomplished by taking a "middle road" between an all-out effort and a slow step-by-step method. At least, that is the opinion of a panel of experts which was given at the 1954 Congress of the International Astronautical Federation.

What does this mean? It may mean you will be able to buy a ticket to go coast-to-coast in 35 minutes by rocket transport before any satellite is ever established. It may mean you will see intercontinental missiles first . . . and rocket assists universally used on jet aircraft. It may mean that the final effort will not be military at all, for it has been said that the telephone and telegraph companies could save billions of dollars per year on maintenance of long lines and transocean cables if relay satellites were available. And it may mean that the first satellite will not be a military base, but a combination of a research laboratory, an astronomical observatory, and a communications relay station.

Many people think a nuclear rocket drive would be the answer, but unless the research men are hiding something up their sleeves, we'll probably ride clumsy liquid-fueled space ships to an orbital rendezvous.

**Space Academy to Be?** In the summer of 1952, White Sands Proving Ground entered into a Co-operative Student Training Program with the New Mexico College of Agriculture and Mechanic Arts. Since then, some four hundred students have been spending six months of the year learning to become engineers and scientists of different sorts in classrooms at the college, and the remaining six months working with rockets and guided missiles at White Sands Proving Ground . . . and getting paid!

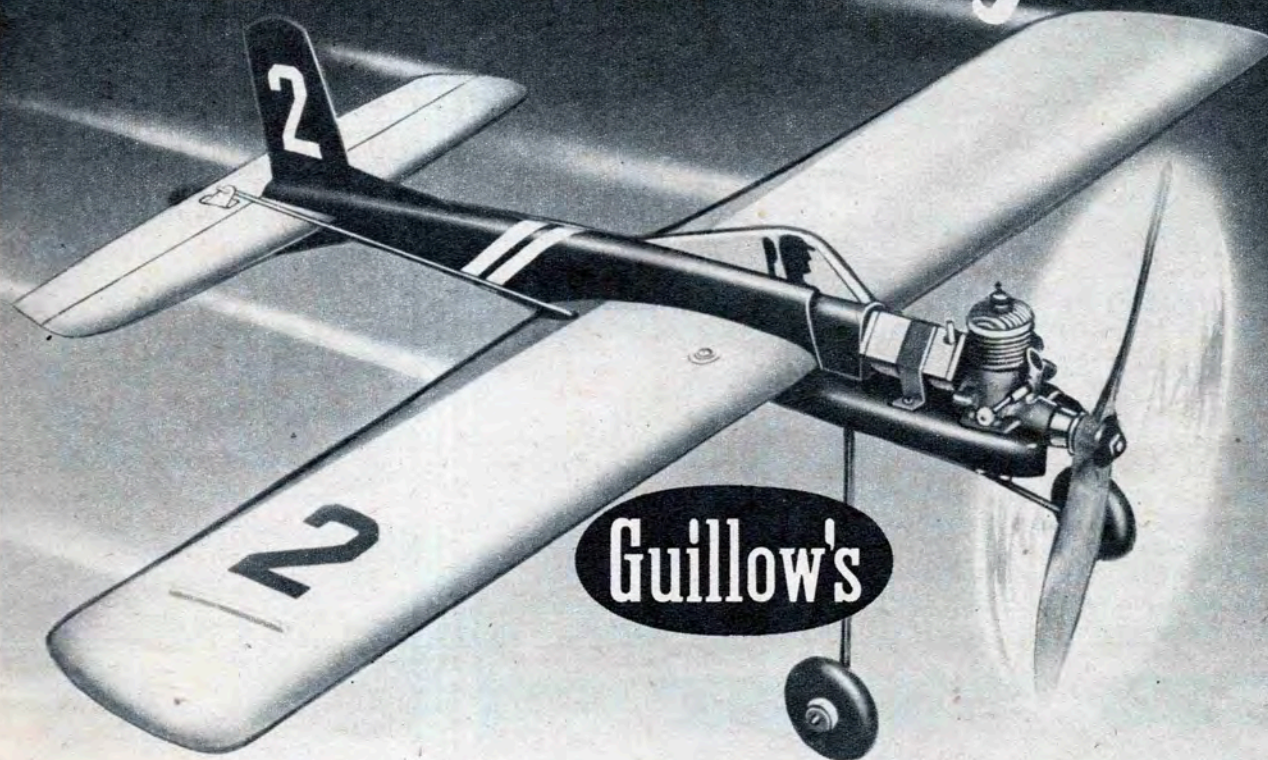
Student mechanical engineers, chemical engineers, electrical engineers, physicists, and mathematicians have been taking part in one of the most progressive education plans yet devised in this country. In addition to getting the usual type of classroom and laboratory training given to science and engineering students everywhere, they have been gaining practical experience in rocket engine testing, instrumentation, electronic guid-

(Continued on page 00)





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**TOUGH . . .** Designed to stand terrific abuse.

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**NO DIFFICULT CONSTRUCTION . . .** The pre-formed balsa and hard wood parts slip together easily.

**THE KIT CONTAINS:** Ready shaped fuselage, complete bellcrank unit, elevator horn and mounting bolts, Wheels and wheel locks, Aircraft linen hinge, finished landing gear, push rod and finished wing-tip guide. Everything but the motor, flying equipment and liquids. Engine .14 to .19 cubic inch displacement

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News!**

Each month Guillow will bring you an intimate record of one of the outstanding figures in both early and recent aviation history. Some lesser known as well as famous names will be featured in this column. Watch for your favorites. You will want to keep all these interesting facts in a "WHO'S WHO" Scrap Book. If you have a favorite aviation personality you would like us to honor in a future column, your suggestions can be mailed directly to us for consideration.

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## The Readers Write

Let's hear from you! Address all letters to Air Trails HOBBIES For Young Men, 304 E. 45th St., New York 17, N. Y.

**Control Line Fans, Arise!** . . . For years model airplane enthusiasts have been chased from Van Cortlandt Park, in the upper Bronx in New York City. While Pelham Bay Park in the extreme East Bronx is the only available place to fly, it is more convenient, and more room is available to thousands of modelers in Van Cortlandt Park. After years of fighting, petitioning, letter writing, phone calls, etc., we were able to get the Park Department to grant us a designated area in which control models may be flown. I was recently informed that the Park Department, after taking surveys, finds that not enough plane enthusiasts are using the designated area, and is now considering taking our site away and giving it over to ball players, who now monopolize three-fourths of the park.

Seymour Brown, Brown's Hobby Center, 6031 Broadway, Bronx 71, N. Y.

● Mr. Brown was a leader in the fight to obtain the flying site. Those interested in retaining it might do well to rally round him. Contact him at above address.

**Scale Plans of Navy Planes** . . . I am interested in obtaining scale model plans for Navy planes. Can you supply me with the name and address of the Navy officer in Washington, D. C.?

Louis Calafone, Bridgeport, Conn.

● For free scale plans of U. S. Navy planes write to Lt. Commander Richard D. Lazenby, USN, Office of Information, Room 4D718, Pentagon Building, Department of the Navy, Washington 25, D. C.

**220 mc. Band** . . . Being the holder of a Technician license, I would be very interested in equipment using the 220 mc. band. Hope you have something soon.

I am using Control Research two-tube right now and like it very much. Trans. is the modified ATH.

E. W. Lindsay, Compton, Calif.

● We hope you like the dope on 220 as given by John Hamblen on page 52 of this issue.

**Geophysical Companies** . . . In your article "Be a Geophysics Explorer!" you mentioned Geophysical Service of Dallas as a company that hires out survey parties. Are there many such companies like this, so that a fellow will have a pretty good chance of being hired once he's had the training needed?

Jerry Volke, Seaford, N. Y.

● There are scores of companies that make exploration surveys, in both the oil and mineral fields. Many of them, like the company mentioned as an example, specialize in the seismic method, some in other methods. Some, like United Geophysical Co. of California, also operate the world over. Other typical companies located in Texas include Tidelands Exploration, Southern Geophysical, Reliable Geophysical, Berg Geophysical, General Geophysical. In Oklahoma you will find such firms as Seismograph Service, Century Geophysical, Geophysical Consultants. In Louisiana: Evangeline Seismic; in Canada: Rands Exploration. Aero Service of Philadelphia and Tulsa is another very active outfit. Radioactive surveys are made by Fairchild Aerial Surveys, Consolidated Geophysical Surveys, and others. There are companies in foreign countries.

**Results with "Windwagon"** . . . When I bought a recent issue of "ATH" I became very interested in the "Windwagon." Within a week I had built it. I used an old Cameron .19 which drove the car at 47.9 miles per hour. I drove a large spike into a parking lot and I had a wire and a bridge hitched up to it. I used a 2 3/4 oz. tank which took the car around 59 laps. I'm very pleased with the results.

William B. Fearon, Framingham Center, Mass.

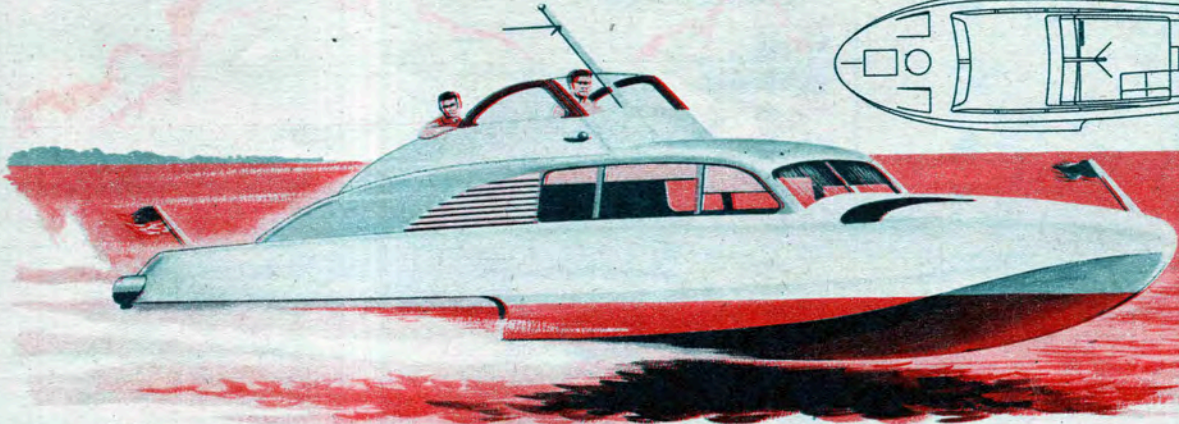
**Watch That Horizon** . . . You know something? Used to be I just read your magazine for plane models. I still read it for 'em, because you still give the best coverage, but now I also read it for guns etc. Am I broadening?

Jack Woodro, Jersey City, N. J.  
(Continued on page 73)



# Boat Design Competition

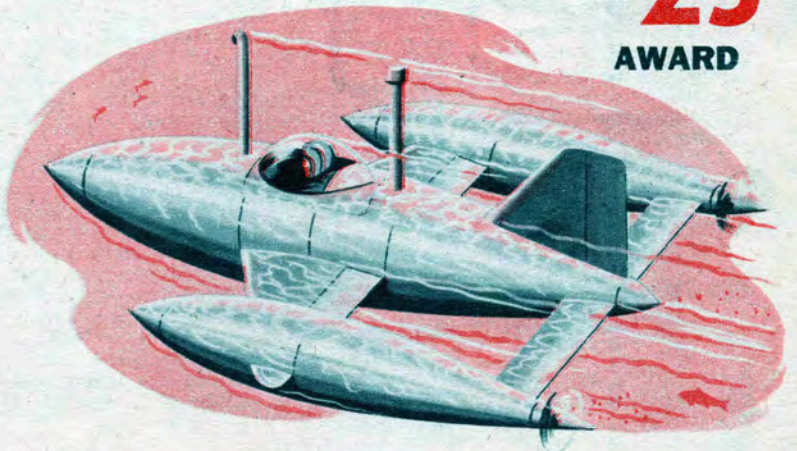
**FIRST**  
**\$50**  
**AWARD**



Jet-powered cabin cruiser by Ted Knowles, Crowley, Colo. Two 1000-lb. thrust turbojets, under bridge deck. Air intake on foredeck can be closed if water is rough, with alternate air-source located inside bridge. Sleeps four. Hull is V-bottomed, with narrow sponson forward to aid stability.

**SECOND**  
**\$25**  
**AWARD**

Midget submarine by Robert F. Cairo of Philadelphia, Pa. Designed on airplane principle with wings and tail surfaces. Depth rudders are on trailing edge of wings. Outboard nacelles house electric propulsion units and batteries to drive them. Periscope in front and snorkel with air conditioner astern. Cockpit dome tempered glass.



**THIRD**  
**\$10**  
**AWARD**



Outboard cabin cruiser by William Hutchison, Miami, Fla., specially designed for fishermen. Construction entirely of plywood. Length 19 ft. 6 in. Power: 25 hp outboard motor which gives it a speed of approximately 20 mph. Stern deck has combination fishing chairs and live well. Twin bunks in cabin.

Rules governing this design competition are as follows: Profile (side), plan (deck) and (cross) sectional views of the proposed craft will be required, plus any detail sketches necessary to illustrate unusual features. Do not handicap yourself by submitting hull drawings less than 6 inches in overall length. Give sketches of craft from three-quarter front and rear positions. Photos of a model of the proposed design may be included. Information of powerplant(s), estimated performance,

dimensions and explanations of special features are required. Data as to age, occupation or schooling of the entrant should accompany each submission. Mail entries to Boat Design Competition, Air Trails HOBBIES For Young Men, 304 E. 45th St., New York 17, N. Y. Entry each month judged most practical or of greatest significance will receive \$50; \$25 will go to second place and \$10 for third. The editors regret they cannot enter into any correspondence or return entries.



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Book No. 53. 192 Pages, 174 illustrations.  
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Covers theory as well as construction. Gives details for control units and complete systems. For beginners and experts alike.

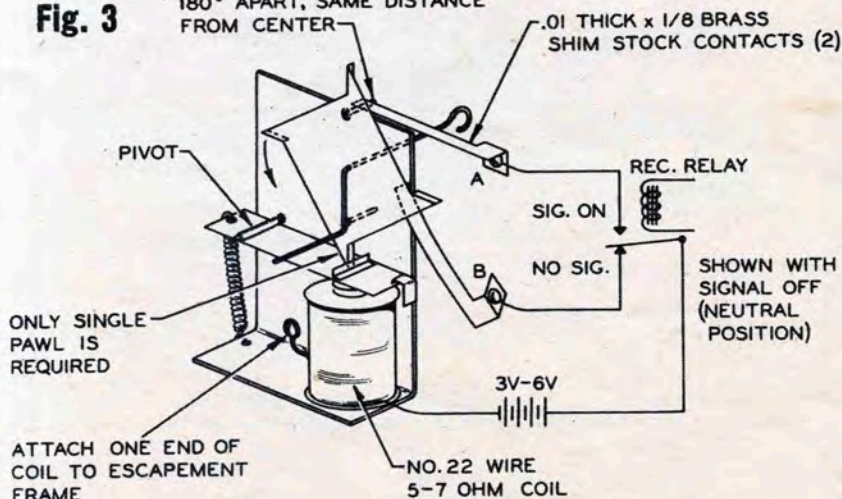
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Relays • Trans-  
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shooting • Trans-  
mitter hints • Plus  
many others •

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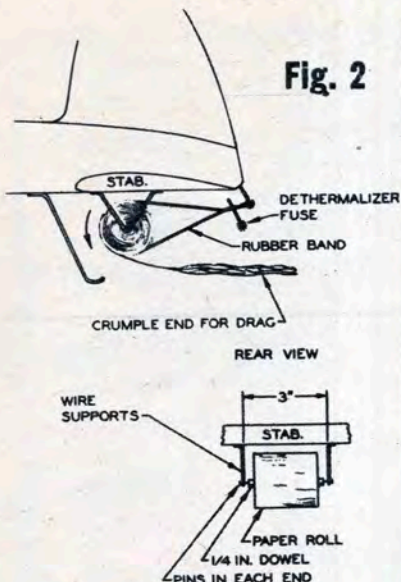
**Fig. 1**

**Technical Notes.** The Pittman DC-702 permanent magnet motor, which was used

SOLDER TWO PINS  
180° APART, SAME DISTANCE  
FROM CENTER







in the Mac-Mech pulser (Oct. '54 issue) has been found highly reliable, but some users have trouble adjusting the brushes for best performance. John Worth (Box 9, Hampton, Va.) suggests removing the carbon blocks from the brushes, an operation which has been found to pep up under-par motors greatly. If the brushes in your motor are adjusted rightly, this won't help much. But some motors have been found to run much faster and take less current when the blocks were removed. The carbon blocks can be wiggled off with tweezers, and the metal brushes have been found to wear very well.

John also outlined an interesting project of his club, the SEV/RCG; they now have a "club R/C plane," consisting of a Bootstraps fitted with Southwestern actuator and Controilaire receiver. All the parts were donated by various members, and the plane is used to give beginners the feel of flying, before they try their own planes, and is also flown by experienced club members whose own planes might be out of commission. For training use, a control box with several keying leads is used; the "instructor" gets the plane off the ground and up to safe height, then the student takes over. Repairs and battery replacements are taken care of on a rotational basis.

**Two Receivers—One Frequency.** Paul Johnson (1500 Arthur Ave., Des Moines 16, Iowa) writes of a unique arrangement he has flown successfully for multi-control purposes—he uses two receivers on the same frequency! Of course, not just any two receivers may be used, but Paul found that a Mini-Mac and a Good tone receiver would work well together. The tone receiver actuates a Bonner Compound escapement for the rudder, while the M-M works another compound for elevator. The M-M is connected to work the latter when the carrier is turned off; normally this receiver is in the "on" condition, since the (Continued on page 79)

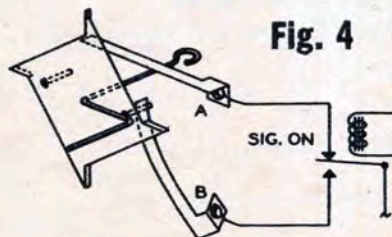


Fig. 4

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## FORD ANNOUNCES NINTH ANNUAL INDUSTRIAL ARTS AWARDS PROGRAM...it's BIGGER and BETTER than ever!



Through its expanded Industrial Arts Awards Program for 1955, Ford Motor Company is offering \$50,000 in awards to America's younger craftsmen. Virtually every project made in a school shop is eligible for the competition.

### ★ SWING INTO ACTION!

The project that you are working on might well be a winner. Or, if you haven't started a project, why don't you get together with your Industrial Arts teacher right now and start planning your entry.

There are hundreds of cash awards, seventy-three of which are for \$100! And the thirty Outstanding Achievement Award winners and, of course, their teachers will be three-day guests of the Ford Motor Company in Detroit this September.

Six special awards have been added to this year's program . . . three for projects displaying the most ingenuity in their conception . . . three for projects with the most outstanding creative design.

### ★ EXTRA! FORD ENGINEERS TO TEST PROJECTS!

Exceptional models of planes, cars, boats, etc., featuring technical innovations such as radio-controlled models, will be referred to Ford engineers for practical laboratory tests. This is a real opportunity for you to earn added recognition.

Outstanding entries will go on public display in selected areas throughout the nation, and in the Ford Rotunda during the summer and autumn of 1955.

**HERE'S HOW TO ENTER . . .** Students in grades 7 through 12 are eligible to enter. Projects must be made under the supervision of an Industrial Arts or Vocational Education instructor. Ask your teacher about entering, or fill out and mail coupon for IAA rules booklet and entry blanks.

#### INDUSTRIAL ARTS AWARDS

FORD MOTOR COMPANY, 3000 Schaefer Road, Dearborn, Michigan  
Dept. F

Name

Address

City  Zone  State



All communications to the editors should be addressed to 304 East 45th St., New York 17, N. Y.

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Please advise us if you move, giving old address and new address; allow four weeks for change of address; address subscription mail to Subscription Department, Air Trails HOBBIES For Young Men, 304 East 45th St., New York 17, N. Y.

# Speaking of HOBBIES®

In the December issue in our "Hobby Bookshelf" (now known as "Bookshelf for Young Men") columnist Bill Lowry brought to your attention the book "How to Make Mobiles" by John Lynch. We've found it fascinating reading indeed, since the largest or smallest mobile (pronounced as in automobile) is designed around a center of gravity just like a boat, plane or car model. If you can handle the model C.G. problem, chances are you'd be a whiz at mobile-making. As a matter of fact, many well-known model materials are used by the mobilists: balsa wood, thin sheet metal, Nylon thread, plastic sheets, etc.

To open his book, Mr. Lynch answers the question, "What is a Mobile?" in part by writing: "Mobiles have very little tradition or history behind them. They are a new art form. The first mobile in the style with which most of us are familiar was created in the early 1939's by Alexander Calder. It was he who gave this art its whole general direction and specific style." To show you just how much fun mobile making is we secured this photo (right) of Mr. Calder at work in his Roxbury, Conn., studio. Called the "greatest master of unusual medium," the artist is seen surrounded by the tools of his trade and his handicraft. Looks pretty much like any modeler's workshop!

Our little cartoon there at the right is a reminder to all subscribers to please notify us well in advance if you move so your ATH/FYM's will continue to reach you without interruption. A full month's notice is needed.

Who'd 'a' think it? When our last reader survey was completed we were informed more than 68,000 of you readers own and use bicycles! Quite a statistic, hey? And look at this: more than 13,000 of you will be buying bikes during the next 12 months. We even have some 2-bike readers among us! "Cycapitalists!" All this is to preface a few remarks about our new "Cycle Chatter" columnist, Otto Eisele. Mr. E. is a real big wheel in the world of cycling. After much digging we finally managed to come up with some information on this character to pass on to you readers. Herewith the facts—

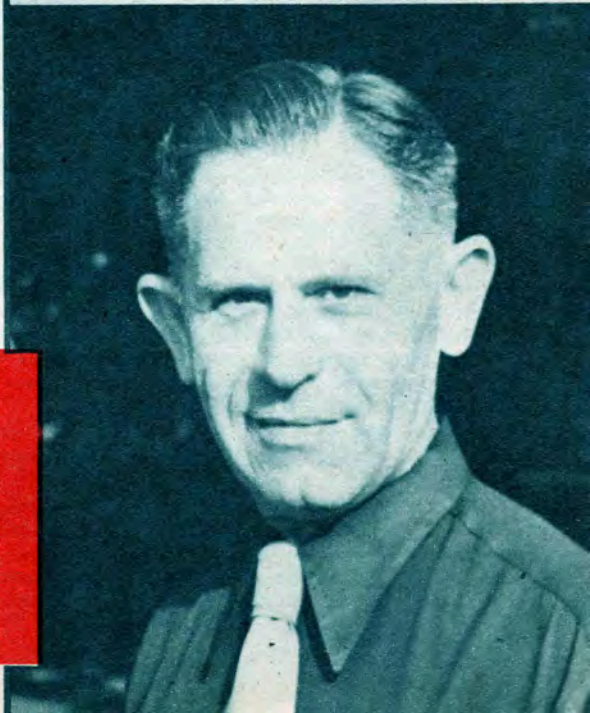
A cyclist and cycling enthusiast for 35 years, Mr. Eisele is considered one of the leading authorities on pedal pushing activities in the United States. An active cyclist, he covers 25 to 50 miles every week-end.

Eisele was President of the Amateur Bicycle League of America, the governing body in the United States for 11 years. He started his cycling official career as Secretary of the Unione Sportiva Italiana, one of America's largest and oldest cycling clubs, in 1921—a position he still holds.

He has been a member of the Cycling Games Committee of the United States Olympic Association for 1936 (Berlin), 1952 (London), and again for the 1956 (Australia) Olympic Games.

Eisele in 1950 represented the United States at the 50th Anniversary Meeting of the Union Cycliste Internationale in Paris—one of the few times a spokesman for our country has been on hand for a meeting of the international governing body of cycling.

His pocket-size "Cycling Almanac" is issued annually. Most of his cycle reporting has appeared in the pages of the cycling trade paper, "American Bicyclist," with which he has been connected as Associate Editor since 1935. He has contributed cycling history and data to Menke's Encyclopedia of Sports and "Information Please Almanac" each year. He wrote the recent revised cycling section for the Encyclopedia Americana, and contributes to numerous sports almanacs and cycling periodicals.



## STREET & SMITH PUBLICATIONS, INC.

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**For Students in Junior  
and Senior High Schools:**



William Clay Ford (left), Ford Motor Company vice president, admires award-winning coffee table by Ronald Lehman of Dayton in I.A.A. competition. Ron took an outstanding achievement prize.

## **\$50,000 FOR INDUSTRIAL ARTS WINNERS**

■ An annual nationwide talent hunt for top industrial arts craftsmen among junior, senior and vocational high school students is under way once again with the distribution of 48,000 rules and information packets to as many shop teachers and supervisors in the nationwide Industrial Arts Award competition. This coast-to-coast, border-to-border search is sponsored by the Ford Motor Company.

The 1954 program, in which more than 20,000 projects were entered, marked the fifth year of Ford sponsorship—this is the sixth. Awards in the program total \$50,000 and range from \$20 to outstanding achievement awards, which include expense-paid trips to Dearborn and Detroit for winning students and their teachers. Thirty of these top awards are given each year.

Cash awards are made to winners of first through fourth places and six honorable mentions in each of four age groups.



Baylor Spratt (left), 19, of Pittsburgh, shows his winning entry, a jet engine model, to Dewey Barich, manager of Ford's educational relations department which handles nation-wide I.A.A. contest.



"Science Teacher" Wally Cox, better known as Mr. Peepers, gives nod to David Link's closed-circuit television system. Link, upper right, from Indianapolis, entered electrical division.

The 12 entrants ranked next receive gold pin place awards. Two special \$100 awards for creative design and ingenuity were added last year.

Thirteen general divisions make up the program. They are: wrought metal, patternmaking and molding, machine shop, plastics, electrical, mechanical drawing, architectural drawing, printing, ceramics, jewelry, leather, model and open.

Entries must be regular class projects under supervision of instructors.

Of the thousands of projects entered in the 1954 competition, 5,039 were sent to Dearborn for the national judging finals. Students from every state and territory were represented in the finals. Each year, a panel of 30 leading industrial educators and industrialists evaluates the entries.

Groups of the award-winning entries are placed on display annually in various parts of the country. Exhibitions were held last year in New York, Los Angeles, Chicago, Dearborn.

The Ford company's Educational Relations Department, managed by Dewey F. Barich, conducts the Industrial Arts Awards competition. The program is supervised by David L. Lewis. Assisting Ford Motor Company is an advisory committee of 52 industrial arts and vocational education leaders.

Commenting on its part in focusing attention on student craftsmen across the country, Henry Ford II, president of the big motor car concern, said:

"We consider it a real opportunity to help the nation's youth by promoting a greater appreciation for the industrial arts and developing pride of workmanship which is so vital to the future of American industry. Today's industrial arts students are tomorrow's workers, foremen, supervisors and executives.

"More and more, industry is learning how to help our schools relate their training more directly to the problems and oppor-



Ford's chief test driver, Al Esper (right) says he never drove anything like Dave Swinder's 6-foot radio-controlled "space ship." This took a 3rd. David is from Warren, Ohio. Note control console.

tunities they will face when they enter the business world, and Ford Motor Company is very proud of the part it plays through such programs as the Industrial Arts Awards."

For complete details you should contact your shop teacher. In the meantime these questions and answers furnished to us by I.A.A. officials may be of interest and help.

#### What is the I.A.A.?

The initials "I.A.A." refer to Industrial Arts Awards, a nation-wide program sponsored by Ford Motor Company to encourage fine workmanship among students and teachers in the field of industrial arts and trade and industrial education.

Each year, the finest examples of student craftsmanship are selected from thousands of school projects entered in the competition by boys and girls from every state in the nation.

#### Who is eligible to enter?

Any boy or girl in grades 7 through 12, enrolled in shop, drawing or printing courses in a public, private or parochial school in the United States, is eligible.

Participants must be under 21 yrs. of age. Those who are graduated at mid-year may enter a project if the work was completed in the semester prior to graduation. Students in post-high school classes are not eligible.

#### What prizes or awards are given for the best projects?

More than 1500 individual awards valued at \$50,000 are given each year. Winners may receive cash prizes, certificates or gold pins, as well as national recognition. Cash awards are: first prize, \$100; second prize, \$80; third prize, \$60; fourth prize, \$40; each honorable mention, \$20.

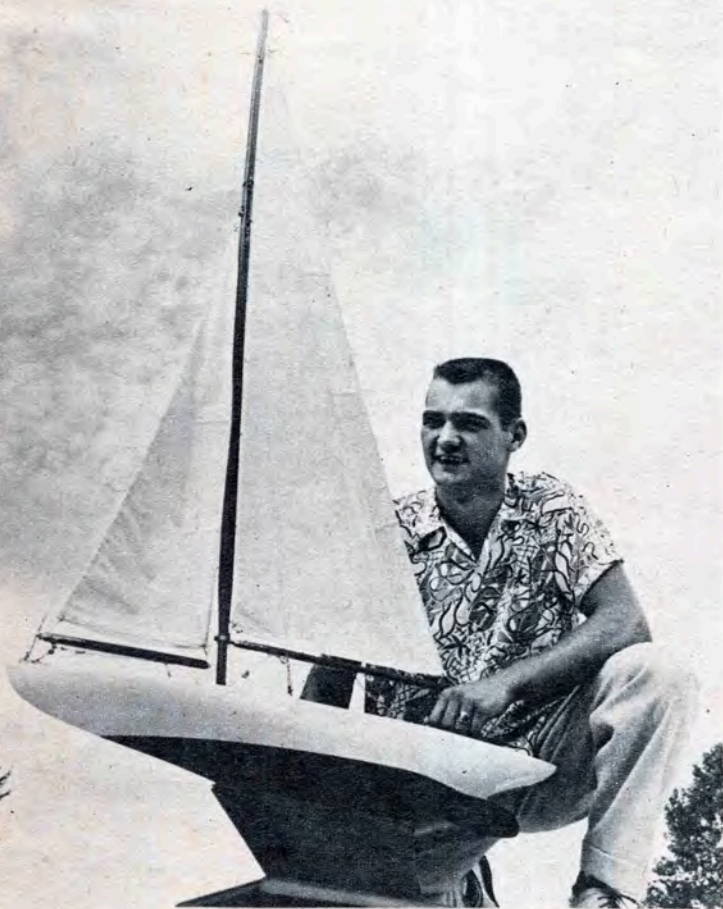
Thirty Outstanding Achievement Awards are presented annually, distributed over the various grade levels. Each Outstanding Achievement Award consists of a three-day, expense-free visit to Detroit for both the student winner and his instructor as guests of Ford Motor Company.

Special awards for recognition of new ideas are given for Creative Design and Ingenuity.

#### What types of projects may be entered?

There's a place for almost any school project in the Industrial Arts Awards. The regulations state that any project made in school under the supervision of an industrial arts or trade and industrial instructor may be entered.

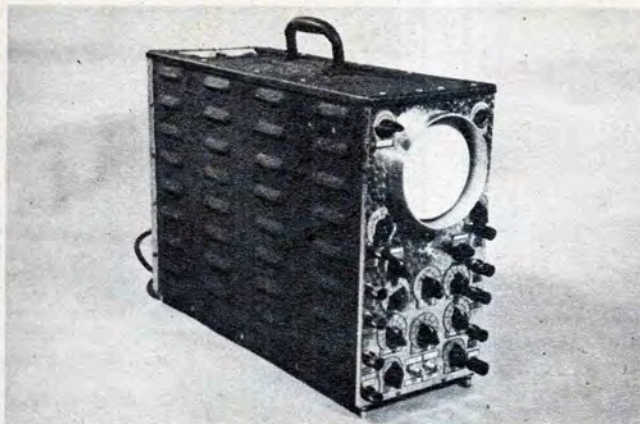
However, it is necessary that the project qualify under Divisions and Classifications described in the official IAA Rules Book. To keep conditions of the competition fair and equal, entries are judged according to the grade level of the student submitting each project.



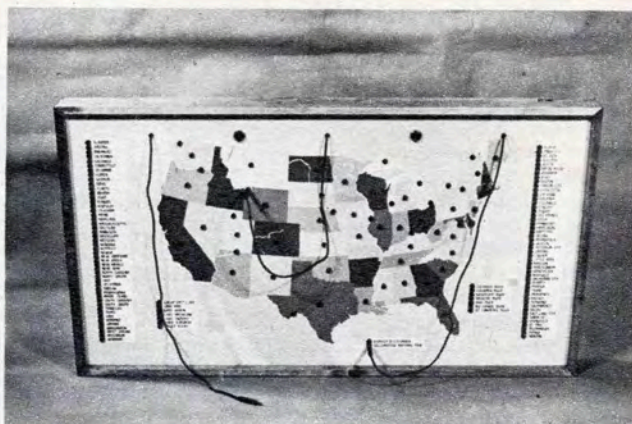
Models have a special class in the I.A.A., must be original design. In his second year of participation Jerry Kachenko, Livonia, Mich., won \$100 first-place award with his 36-inch sailboat.



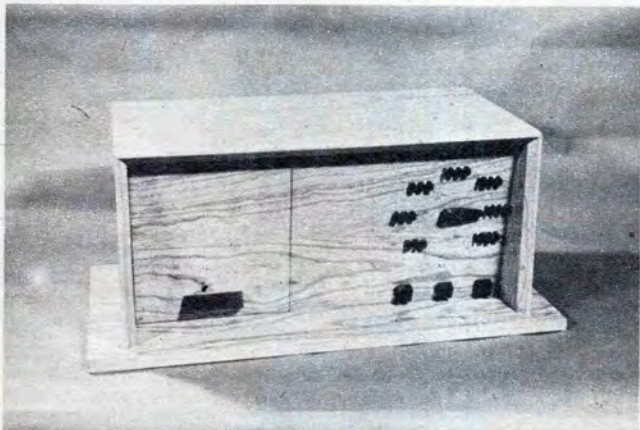
## \$50,000 FOR INDUSTRIAL ARTS WINNERS



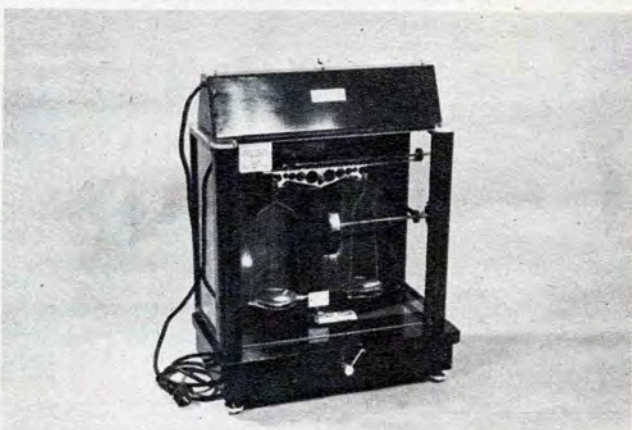
Example of outstanding entry, an oscilloscope made and entered in the Industrial Arts Awards contest by John Ugo, Detroit.



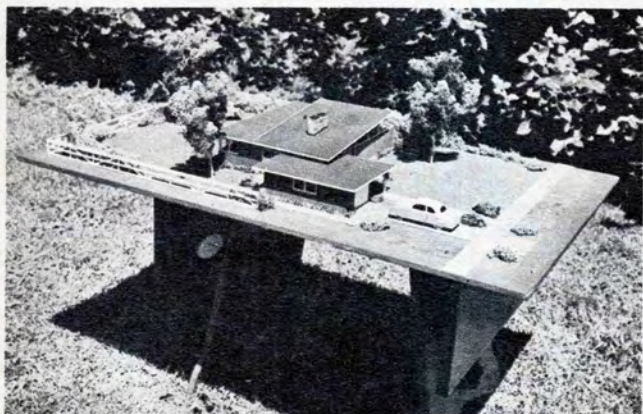
Clever electrical map of the U.S. by Orval Lorimor, Davenport, Iowa. Checks on state capitals, lakes, sounds and major rivers.



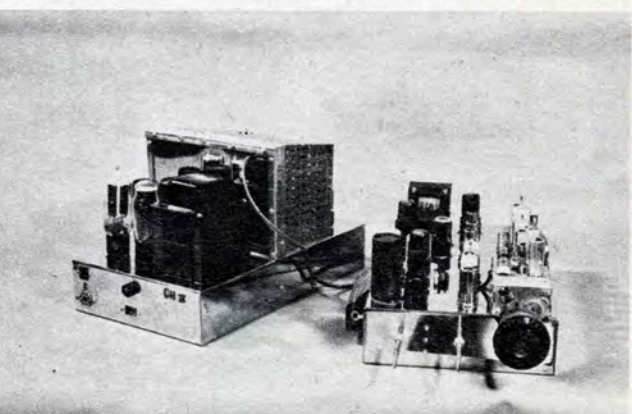
Fine design and woodworking by Dale Bostrom, 13, La Canada, Calif. West Coast craftsmen always seem to enter I.A.A. in large numbers.



Seventeen-year-old Werner Ruefenacht of Salt Lake City constructed this accurate, good-looking analytical balance. Some undertaking!



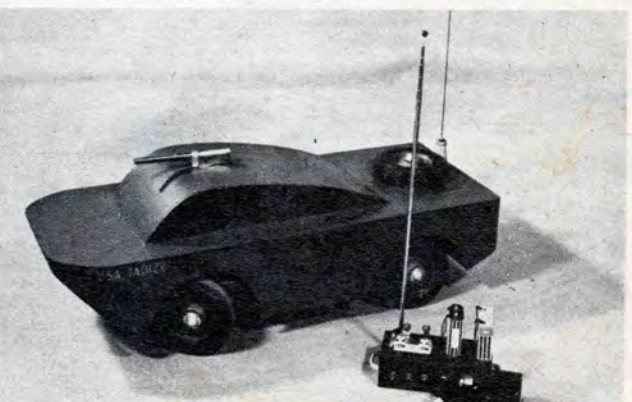
Splendid sample of an architectural model is this submitted by Warren Koerner, 17, Chicago. There's a house we'd like ourselves.



Some folks even make own television set as did Norman Magidow, 18, Alhambra, Calif. Compact, very neat power supply, tuner.



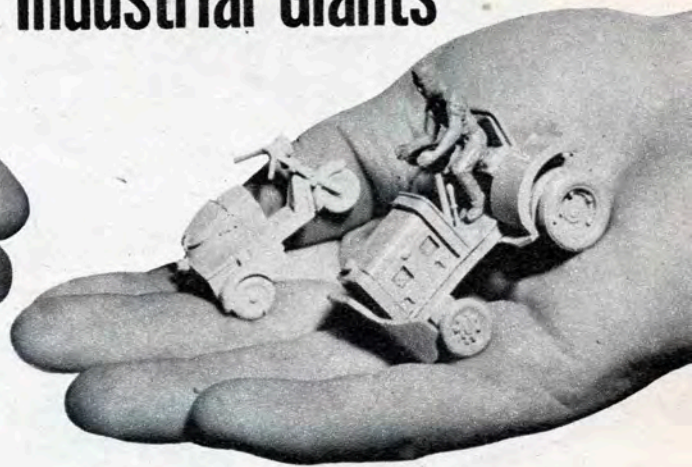
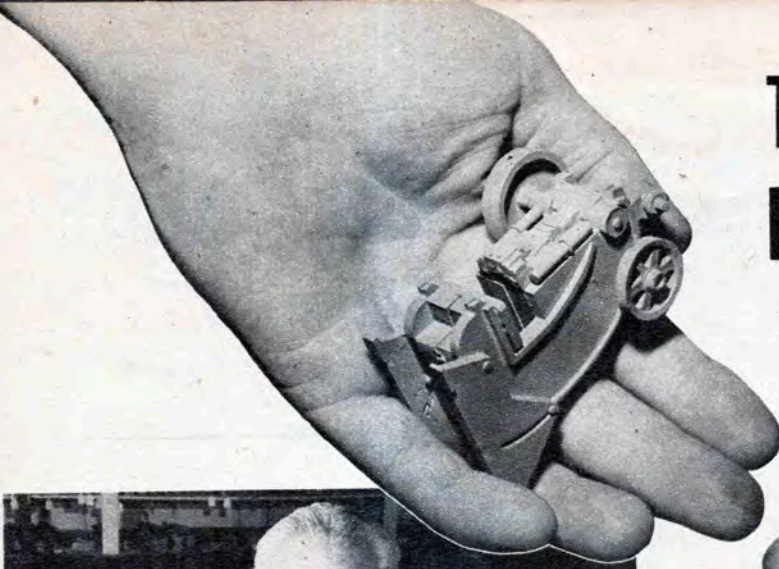
Among the artistic endeavors this plastic carving was a standout. This entry was executed by Ken Hiramoto, 20, Cleveland, Ohio.



This one got a lot of publicity: slick radio-controlled jeep designed and built by Donald Trumbull, 15, of Milford, Conn.



# Tiny Models For Industrial Giants



F. Ward Harmon with a typical layout of a modern plant.

■ Large industrial concerns planning their manufacturing facilities do it three-dimensionally with miniature replicas of equipment they will use. These accurate scale models ranging from machine tools to office furniture permit efficient layout of a proposed factory by utilizing all available space and proper placement of equipment long before the real job is started, thus saving considerable time, money and increasing productivity. To F. Ward Harmon of Halesite, L.I., N.Y., head of one firm making the models, this mini-business is not new, for as a manufacturer of model boat kits he is accustomed to working in small scale and attaining accuracy.



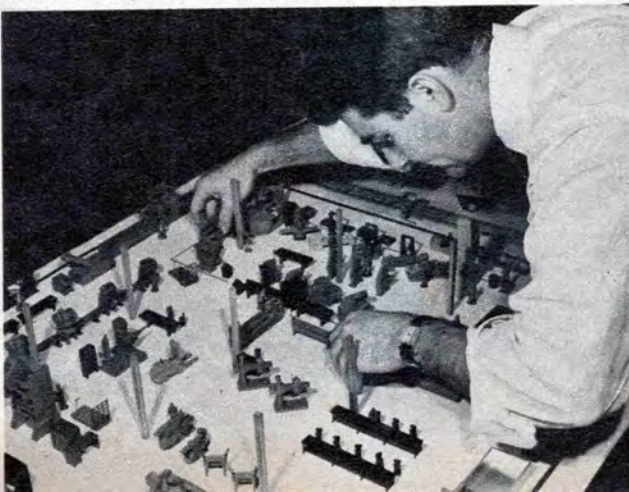
Models here being lead-cast in a rubber mold, six at a time.



All models are made to same exact scale, true in every detail.

Errors in blueprint floor plans are readily detected this way.

Office and factory workers are placed in their proper positions.



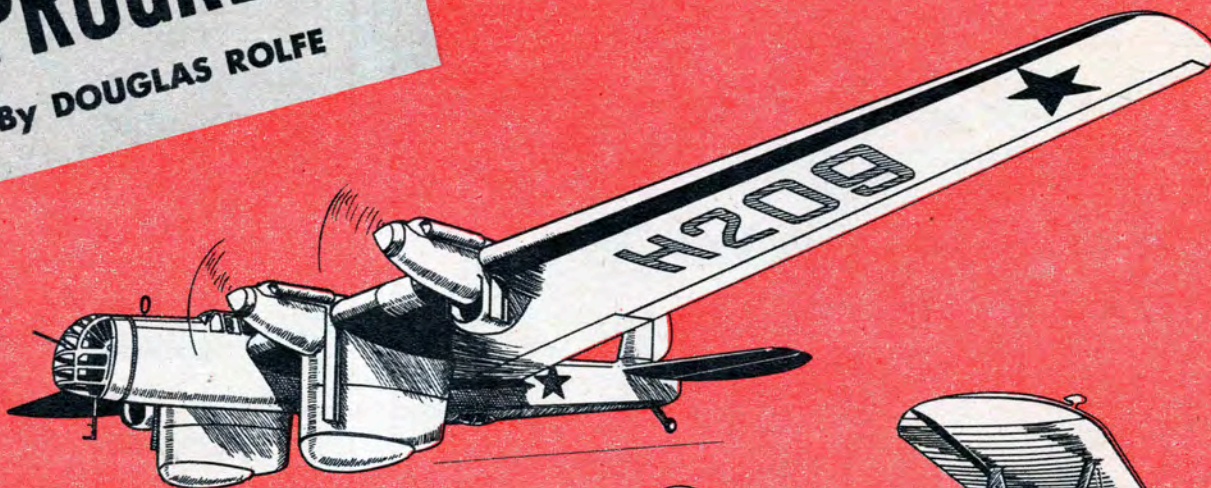


# AIR PROGRESS

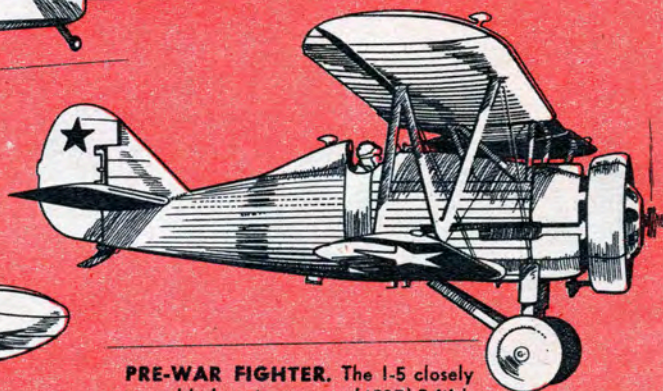
By DOUGLAS ROLFE

## SOVIET AIR FORCE

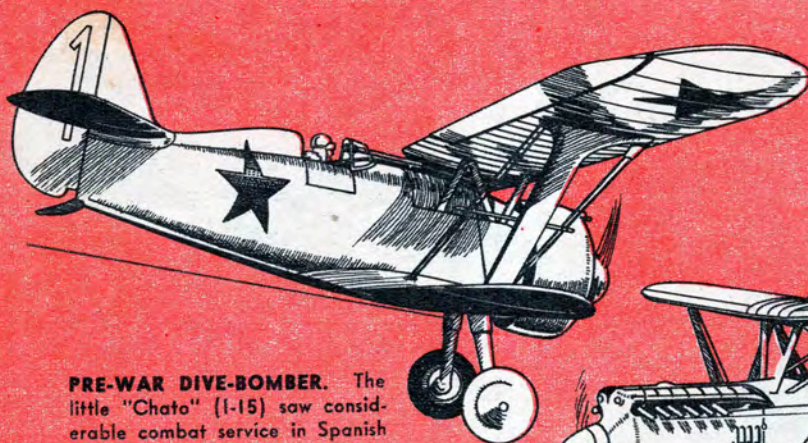
Through World War II



**PRE-WAR BOMBER.** The TB-6b heavy bomber had four 1,100 hp M-100 liquid-cooled engines; semi-retractable landing gear; 3 tons of bombs.



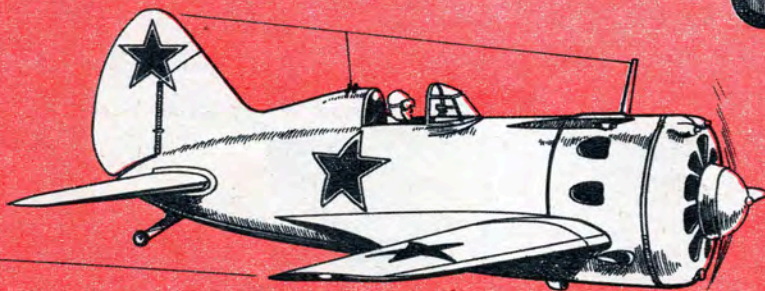
**PRE-WAR FIGHTER.** The I-5 closely resembled contemporary (1937) British Gloster Gladiator fighter. 480 hp M-22 (Gnome-Rhone) engine; max. speed about 175 mph, 4 fixed m.g.s.



**PRE-WAR DIVE-BOMBER.** The little "Chato" (I-15) saw considerable combat service in Spanish civil war. With a 750 hp M-25 (Wright Cyclone) engine, it had top speed of about 223 mph.



**PRE-WAR RECONNAISSANCE.** R-5 was powered with 680 hp M-17 (B.M.W. VI); 124 mph tops; served mainly as military ambulance plane.

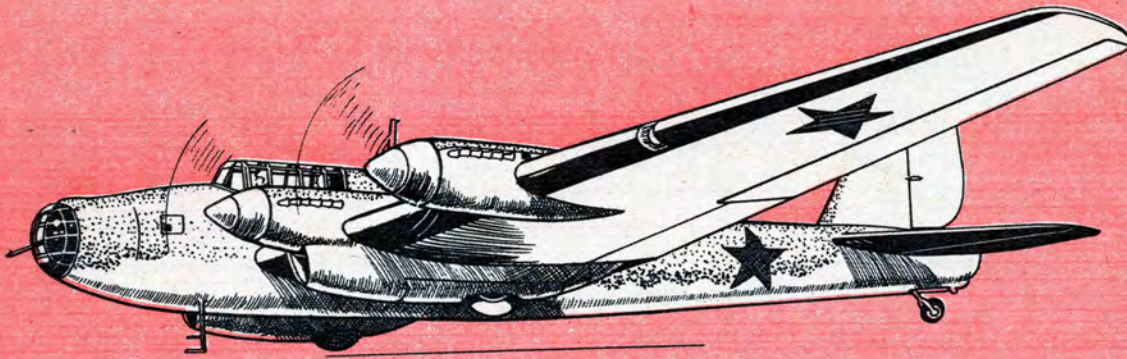


**PRE-WAR FIGHTER.** Polykarpov I-16C "Super-Rata" was cleaned-up version of I-16 "Rata" which had fixed landing legs. Twin-row 1,000 hp radial engine, 300 mph tops, 4 m.g.s, retractable l.g.

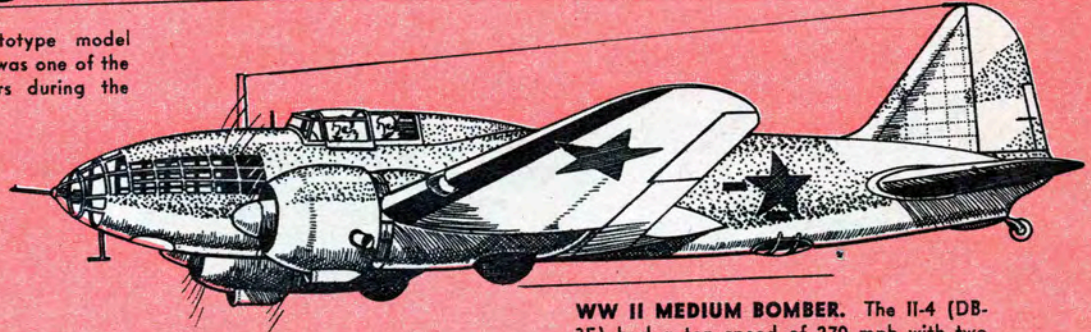
In the late 20's and early 30's very little was known as to the quality or strength of the Soviet Air Force. It was not until the Spanish civil war that the world had its first glimpse of such Russian types as the I-15 biplane and the I-16 mono-

plane fighters, from which some estimate of that country's aviation technology could be gleaned. In 1938, estimates of actual Soviet strength varied all the way from 3,000 to 7,000 military aircraft of all types. However, it seems cer-

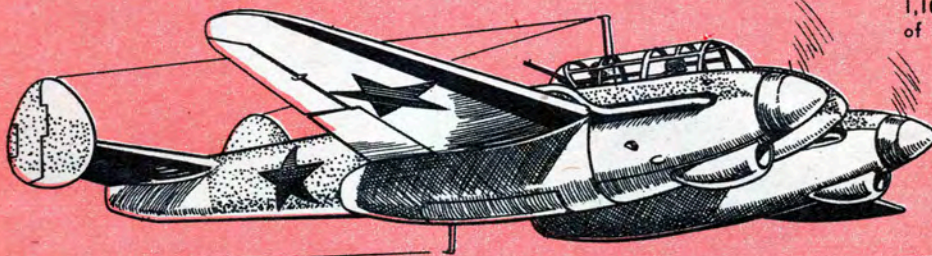




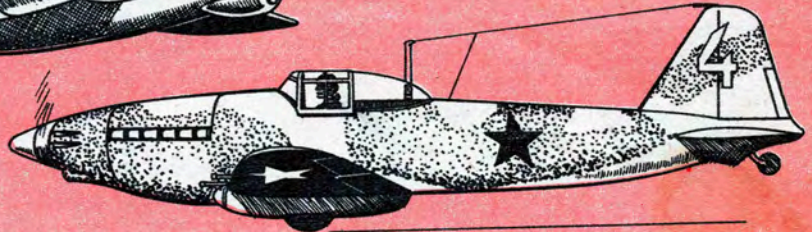
**WW II HEAVY BOMBER.** Prototype model of the TB-7 appeared in 1938. It was one of the only Russian long-range bombers during the early stages of the Hitler war, with a top speed of 280 mph and a gross weight of 22 tons. A machine of this type carried Molotov from Moscow to Washington in 1942.



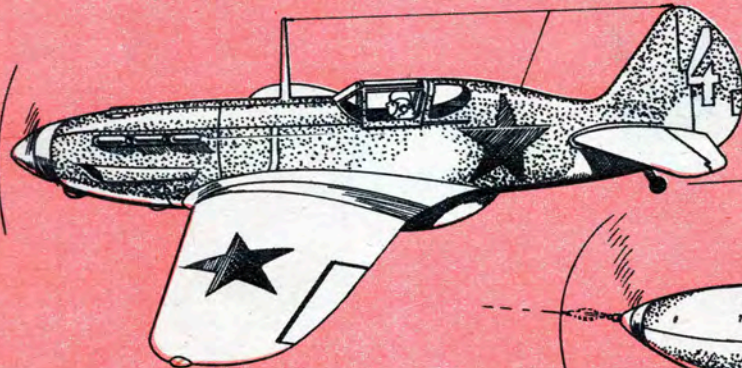
**WW II MEDIUM BOMBER.** The Il-4 (DB-3F) had a top speed of 270 mph with two 1,100 hp radial engines, and was a variant of the Type DB-3 with modified nose.



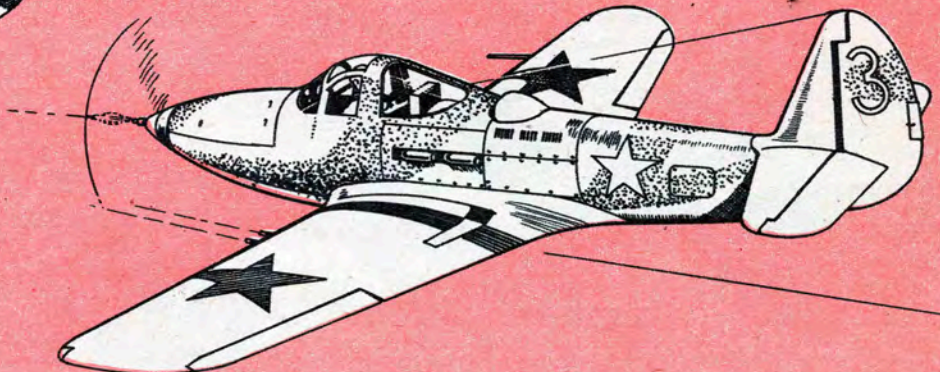
**WW II FIGHTER-BOMBER.** YAK-4 was also used as dive-bomber and for ground attack. Two 1,030 hp I/c engines, 300 mph tops.



**WW II GROUND ATTACK.** The Russian-designed Il-2 Stormovik (above) and the U.S.-built lend-lease Airacobra were the favorite attack aircraft of the Soviet Air Force against the German armor.



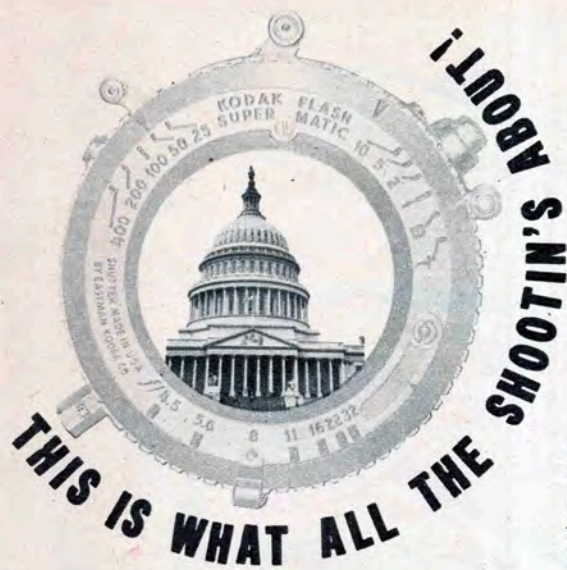
**WW II FIGHTER.** The MiG-3 was one of a number of fine Russian fighter types which replaced the Super-Rata in early stages of war. 1,200 hp liquid-cooled engine; 360 mph max.



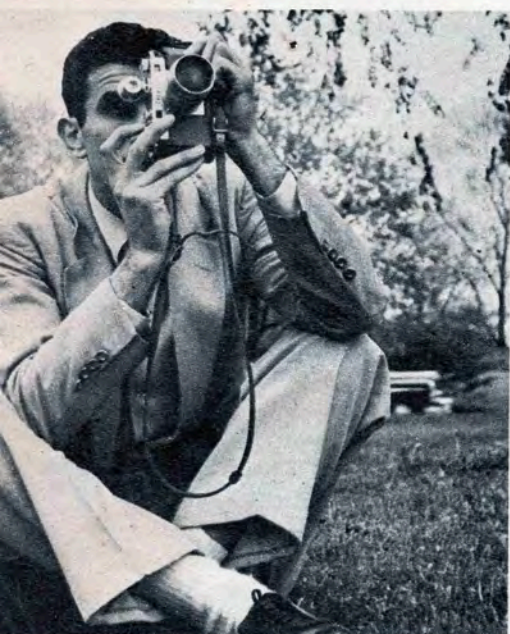
tain that up to this date the Russians were using engines of foreign design, and plane design strongly reflected outside influence. With World War II the story changed. The Soviet air arm had obviously improved greatly by the time Hitler's

hordes swept across the steppes. Despite the enormous initial losses of operational aircraft, the Russians kept up air activity and actually harassed the Luftwaffe, with the help of P-39s, A-20s, other U. S. Lend-Lease planes.





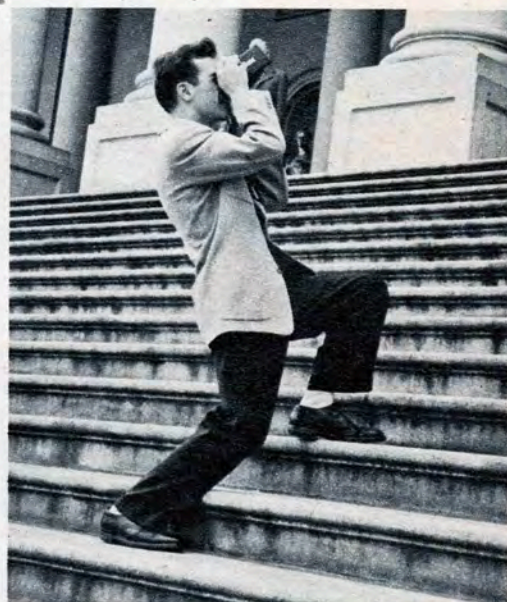
He's going to try for his picture beneath the dark portico of the Capitol Building. This is one of the most popular "shots" in the Nation's Capital.



For full-size view of the Capitol you must back up so far you sit on grass between Supreme Court and Library of Congress.



Shooting a 287½ ft. dome, would you think 18 inches lower can make a difference? Well, this chap did.

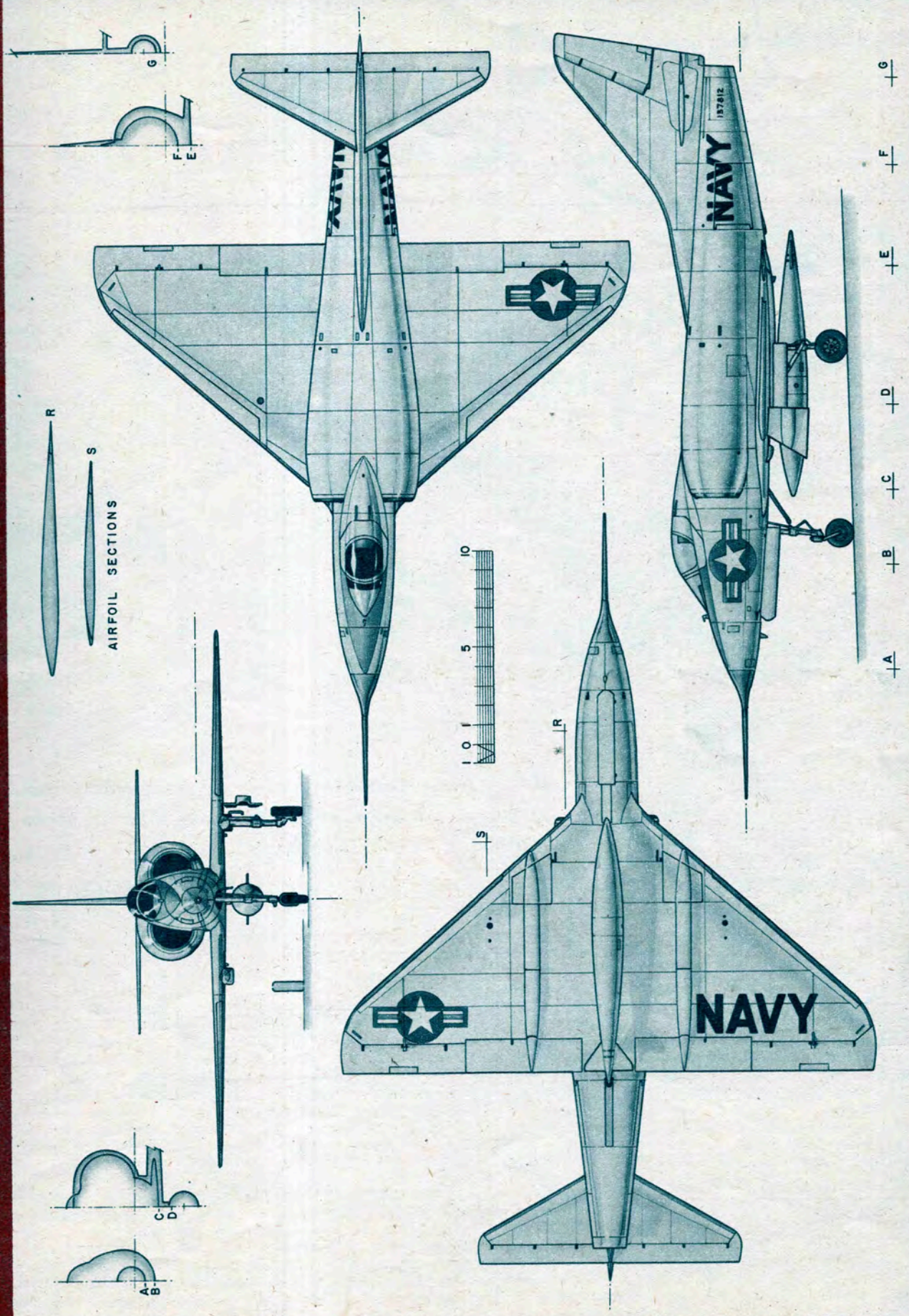


Here's the dramatic approach. Our guess is that this young fellow is going to make a great sports photographer some day. Don't let that dome get away.



Capitol photographers can be divided into amateurs and professionals, architectural and portrait. Most numerous are the amateur portraitists.





Heralding the new era of bantam combat planes, the Douglas A4D-1 Skyhawk harbors a giant's punch. Designed especially to carry an atom bomb and operate from aircraft carriers, it will fly faster and farther with

a more powerful striking load than any airplane of its type. The Skyhawk is so small that it has been built without folding wings traditional in Navy carrier aircraft. Its radius is greater than that of present prop-driven attack planes.

# DOUGLAS A4D-1 "SKYHAWK"

SCALE VIEWS BY JEFFERIES



# How to Paint Plastic Models

Here's some excellent advice by an aeronautical engineer on how to make your plastic scale craft look like authentic models instead of toys

By WILLIAM C. GROVE, JR.

■ In 1947 a new type of solid scale kit quietly yet persistently began to appear on the hobby shop shelf. During the next couple of years the space taken up on the shelf changed little. Then, as if in a geometric progression this space began to expand. By late 1953 whole sections of the hobby shop were filled with these kits. Dime stores, toy shops, and department stores were stocking them. Plastic kits are apparently here to stay; so let's see why they have zoomed into popularity, what they are, and how we can get the most out of them.

Their popularity has been due, of course, to the prefabricated, pre-painted nature of the kit coupled with the realistic appearance of the finished model. Youngsters who previously could not build a model now can enjoy the finished item in an hour. Attractive desk, bookshelf, or mantel displays can be had for only a quarter to a couple of bucks. Anyone can assemble, to some degree at least, a plastic kit.

Plastic substances are divided into two

principal classes; thermosetting plastics which harden by the application of heat and on which further heating has no softening effect, and thermoplastic materials which soften under heat and re-harden when the heat is removed. Polystyrene is one of the most important and least expensive of the thermoplastic materials. Styrene ( $C_6H_5CH=CH_2$ ), a co-material with butadiene in the production of Buna S synthetic rubber, forms the polystyrene plastics. It is of polystyrene that the majority of these kits are molded.

The chart (page 29) shows the basic ingredients and processes involved in the making up of polystyrene plastic.

I visited one plant and saw the F-102 kit through the stages of production. The mold was machined in steel by milling and by hobbing, which is the pressing of a hardened form into the mold to yield the required contour. A complete mold weighs around 1200 pounds. The polystyrene reaches a large injection molding machine in the form of small crumbles.

With all the necessary equipment and tools assembled, the author usually builds several models at one time. Note reference data.

Illustrated here are methods of removing "flash," cementing (note swab) and the holding together of parts with rubber bands.



It is first brought to a temperature of 500 degrees F. and then it is injected into the mold at a pressure of 16,000 psi. It resembles thick molasses at this stage. The period of operation for an injection, cooling, and ejection of the part is less than a minute.

Kits of all types of aircraft, ships, and vehicles are available in scales ranging from 1/540 to 1/48. This report pertains primarily to the airplane and helicopter kits, though the others may be treated in much the same manner. As most of these aircraft kits are 1/4" equals 1' scale, the possibilities of collection are apparent. The job of the builder is to make the model look like a model, or better yet the airplane in question, and not like a toy. Some, for instance some higher priced kits, appear best when built exactly as recommended in the kit; others require additional attention for best results. We will select one of the latter and proceed to build it into a collector's shelf piece.

We want a cement that acts as a slight solvent to the plastic so that the surfaces are actually fused together. A regular balsa model cement does not give adequate adhesion. Suitable cements are perchlorethylene, refined ethylene dichloride, carbon tetrachloride, and toluene. There are good specialized model plastic cements supplied in tubes and bottles.

With paint it is just the opposite; we do not want the plastic to soften. Model airplane dope usually does just that, so we must use the special paints developed for plastics or enamels.

The first big decision is whether or not to use color as supplied in the kit. We consult books and magazines for the authentic color. It is seldom practical to change grey to aluminum or metallic blue to Navy dark blue. In other instances, however, we paint the correct color unless the molded color gives an artistic appearance which might outweigh the other considerations.

There is rather an equal distribution of kits with and kits without landing gear. We use landing gear when it is supplied in the kit as it gives variation to the collection as a whole and often increases

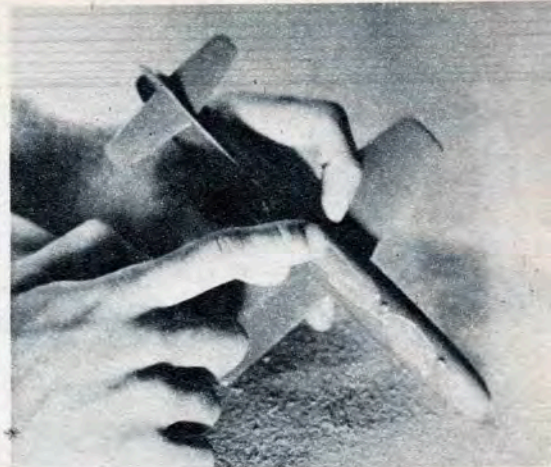
the scale effect. We go easy on bombs and rockets, however, as an overabundance tends to make the model look "toyish."

Parts that are integral with the fuselage such as seats, weights for tricycle gear, and special stand pieces must be considered first. We now assemble the fuselage and wing half combinations. We use a cotton wad on a toothpick for applying thin cement to these parts. Rubber bands and clamps made from balsa and clothespins are used for holding assemblies while they are set aside to harden for several hours.

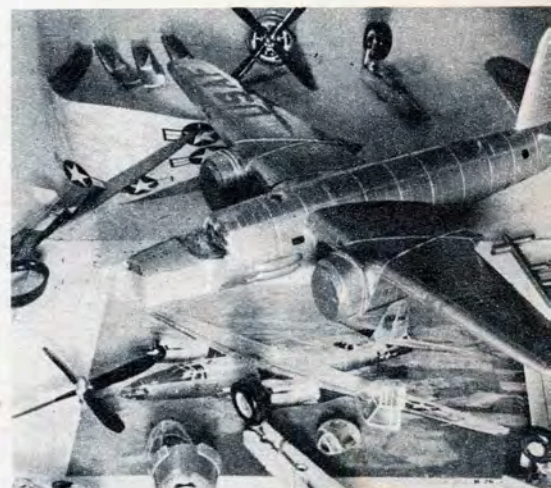
Flash is the unnecessary material along the edge of the part caused by the plastic flowing into the hold separations. Flash removal, along with detail painting, is the distinction between the toy and the model. We draw a sharp razor blade along the flash line, holding the blade perpendicular to the surface. This removes the flash without scalloping. Apply the same operation to the glued seams. A paste made of Old Dutch Cleanser (or an equivalent) and water can be rubbed over the seam to restore a reflective surface. Various polishing compounds may be used with a slow moving wheel for this operation. A fast wheel might melt the plastic.

A three-view of the particular plane is checked for dihedral of wings and of horizontal tailplane. If it is necessary to carve the tabs and butt joints, be extremely cautious as the blade tends to jump out of the tough plastic.

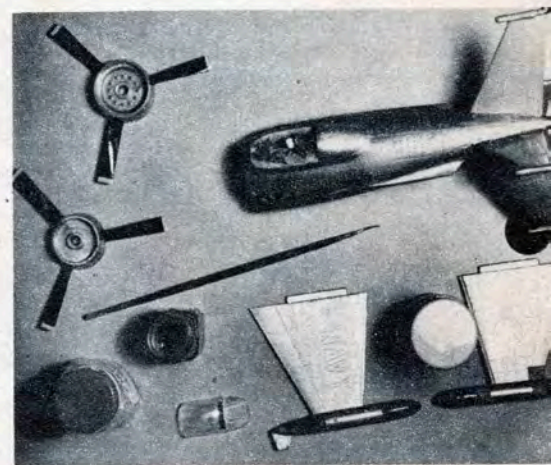
Detail painting is the time-consuming though not particularly difficult job most frequently overlooked by the younger builder. We use a mottled effect of black, grey, brown, and whatever other color seems artistic at the time, on the area surrounding the pilot in the cockpit to give a feeling of depth. We paint the pilot and equipment, and most important we paint the tires black. The canopy dividing lines are painted the same color as the fuselage. If the plane is aluminum these lines are painted grey. Miscellaneous small parts such as guns and landing gear are more easily painted while still (Continued on page 73)



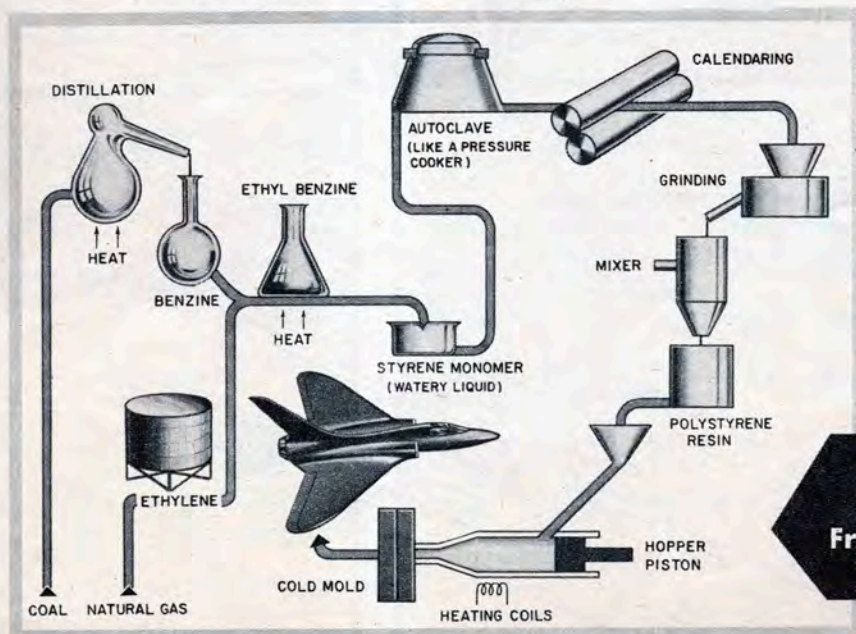
Use of abrasive paste for polishing is demonstrated here. The author, 22, is a design engineer for Lockheed Aircraft in Calif.



Small parts are painted before being removed from the plastic "trees" to which they are still attached when kit is purchased.



Here we see how the details are painted. The cockpit gets a mottled effect which gives it depth (details in the article).



## POLYSTYRENE CHART: From coal and gas to models



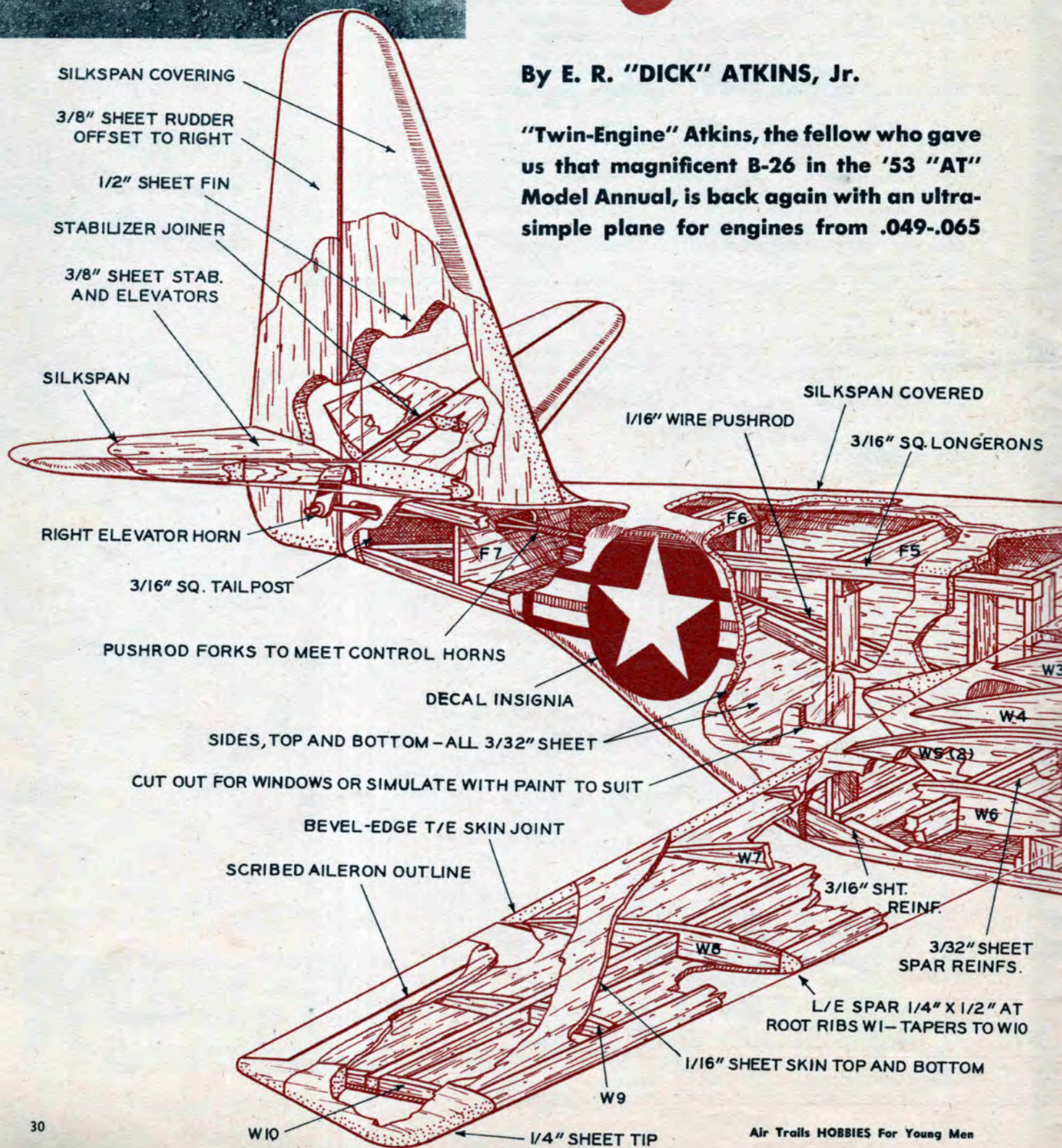


Easily Built Twin-Engine  
Control Line Flying Scale...

# Chase C-122 Avitruc

By E. R. "DICK" ATKINS, Jr.

"Twin-Engine" Atkins, the fellow who gave us that magnificent B-26 in the '53 "AT" Model Annual, is back again with an ultra-simple plane for engines from .049-.065





■ Here is a little ship that you can cut your twin-engined teeth on with little trouble. It is small and compact and the box-like construction makes for easy building. If you haven't tried multi-engine control line yet you're missing some real fun. The C-122C will give you the feel and enjoyment of the larger models without the expense and construction time normally associated with them. This little ship is scaled at  $\frac{3}{8}" = 1'$ .

Here is some information on the big brother of our little ship; the C-122C is an all-metal, high-winged, twin-engine monoplane designed for use as a troop transport and a cargo carrier.

It is unique in that it was developed from a cargo glider and is essentially still a glider. The nacelles can be removed in a few minutes and an attachment in the nose provides for towing it as a glider with or without the engines in place. It will carry 20 fully equipped troops plus equipment or 21,000 lbs. of cargo. It is powered by two Wright R-1820-101 engines developing a total of 1850 hp. It cruises at 200 mph and has a top speed of 240 mph.

We begin construction with a choice of two pieces of  $\frac{3}{32}" \times 3" \times 36"$  sheet balsa of the same hardness. This is important so as to have the sides of the fuselage bend evenly. Splice the sheets to obtain the necessary width for the sides and cut to outline from the plans. Add the  $\frac{3}{16}"$  square balsa strips to the top and bottom of the fuselage sides. Glue formers F-1 and F-2 in place and soak the forward section of the fuselage in hot water to allow bending without breaking. Add formers F-3 through F-7.

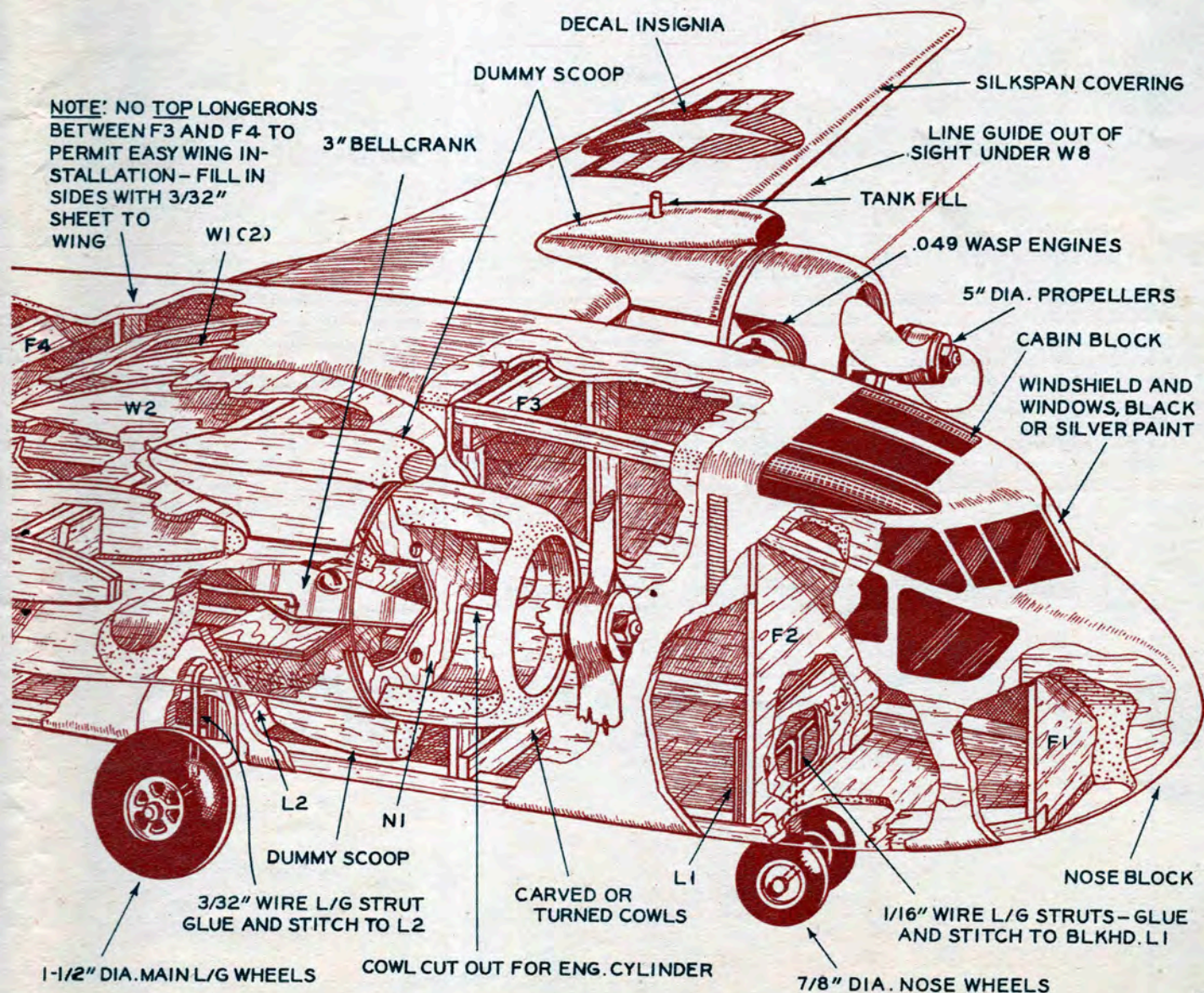
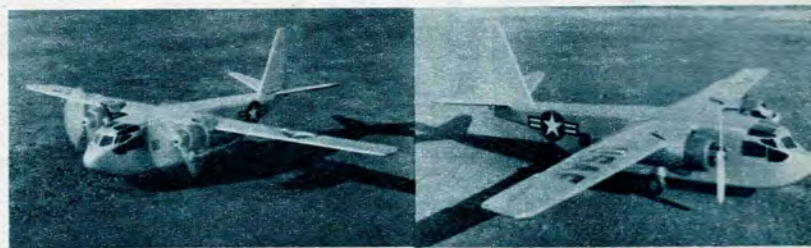
Cut former L-1 and L-2 from  $\frac{3}{32}"$  plywood. Drill holes in former L-1 as indicated on plans and attach nose gear with soft wire. Cement freely and reinforce with gauze. Main gear is mounted to former L-2 in the same manner. Place L-1 in position

in the fuselage against former F-2 and reinforce with gauze. Glue L-2 in position. Cut bellcrank mount from  $\frac{3}{32}"$  plywood, drill and mount a 3" Veco bellcrank. Glue in position on top of L-2. Add  $\frac{3}{16}"$  gussets. Add leadouts after slotting fuselage sides to receive them.

Cover top and bottom of fuselage with  $\frac{3}{32}"$  sheet balsa with grain running across from side to side. Glue nose and cabin top blocks in place and cut to shape. Make windshield braces from  $\frac{1}{16}"$  square balsa. Make push rod from  $\frac{1}{16}"$  wire as indicated on plans and put in position before closing up fuselage.

Sand fuselage to shape and add landing gear fairings. Cut windshield from clear plastic and glue in position. Cut slots for windows and place clear plastic in position. The windshield and windows may be painted on if desired to save building time.

Wing spar can be made in one piece from a  $\frac{3}{16}" \times 1"$  strip or made in three pieces from scrap  $\frac{3}{16}"$ . Either way cut main wing spar to shape and add ribs W-1 through W-5. Cover bottom with  $\frac{1}{16}"$  sheet balsa, beveling the trailing edge. Cut

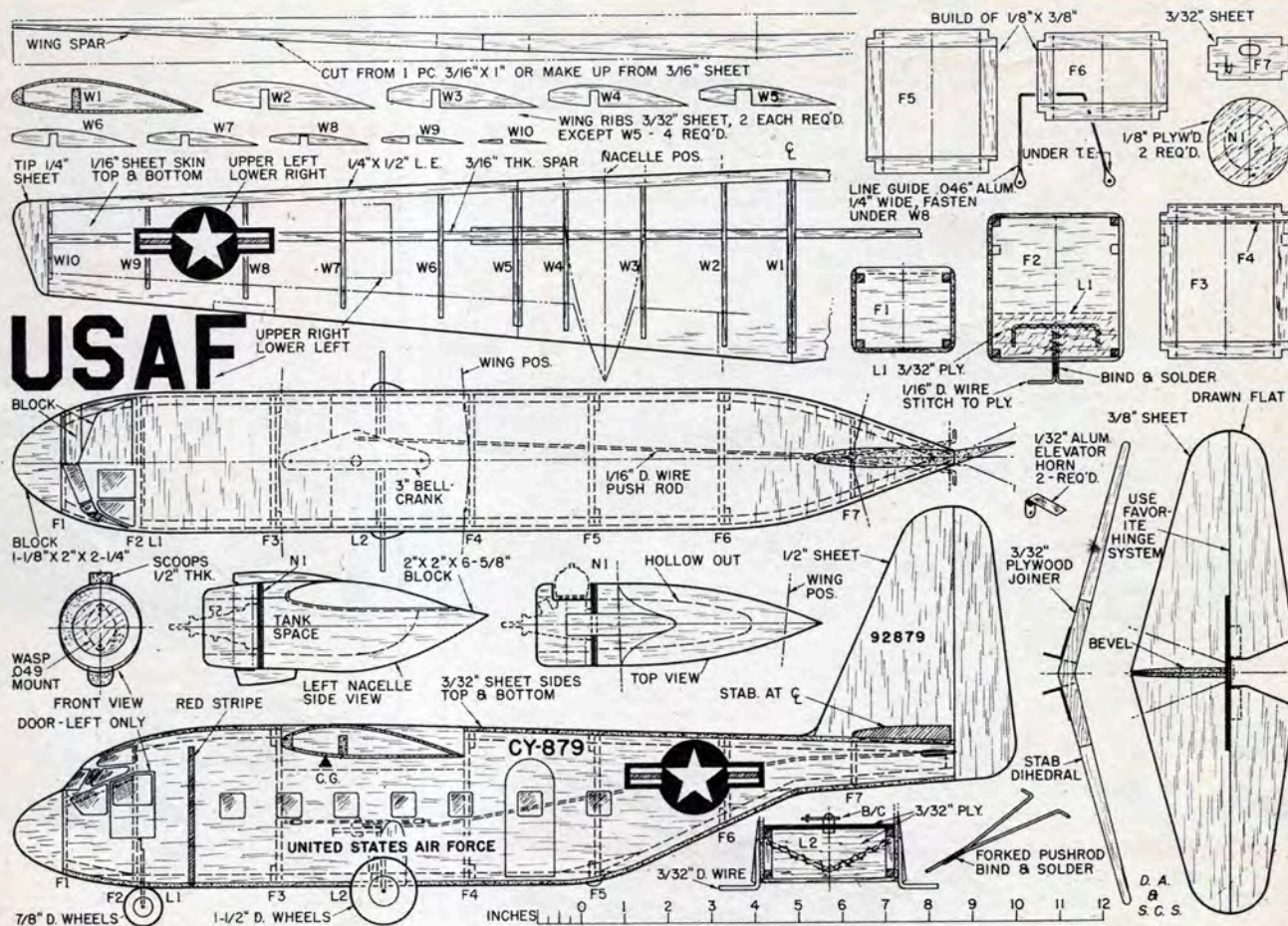






## CHASE C-122 AVITRUC

Full-size plans for the Chase C-122 are on Group Plan #255 from Hobby Helpers, 770 Hunts Point Ave., New York 59, N. Y. (50¢).



outer panel spar to shape and add ribs W-6 through W-10. Glue leadout guide mount block at W-8. Drill holes for attaching leadout guide. Cover bottom of outer wing panels with 1/16" sheet balsa and joint to wing center panel with 3/32" sheet balsa joiners. Cover top of wing. Add tips and sand to shape.

Carve nacelles to shape and contour. Hollow out inside as indicated on plans. Cut N-1 firewall from 1/8" plywood and glue in place. Reinforce with gauze on the inside. Fit tank inside nacelle and glue firmly with fuel proof glue. Coat inside of the nacelle with fuel proof dope. Any convenient sized tank may be used. An extension to the filler tube will be necessary to run through the top of the nacelle. Glue nacelles in position on the wing. Add lower air scoop.

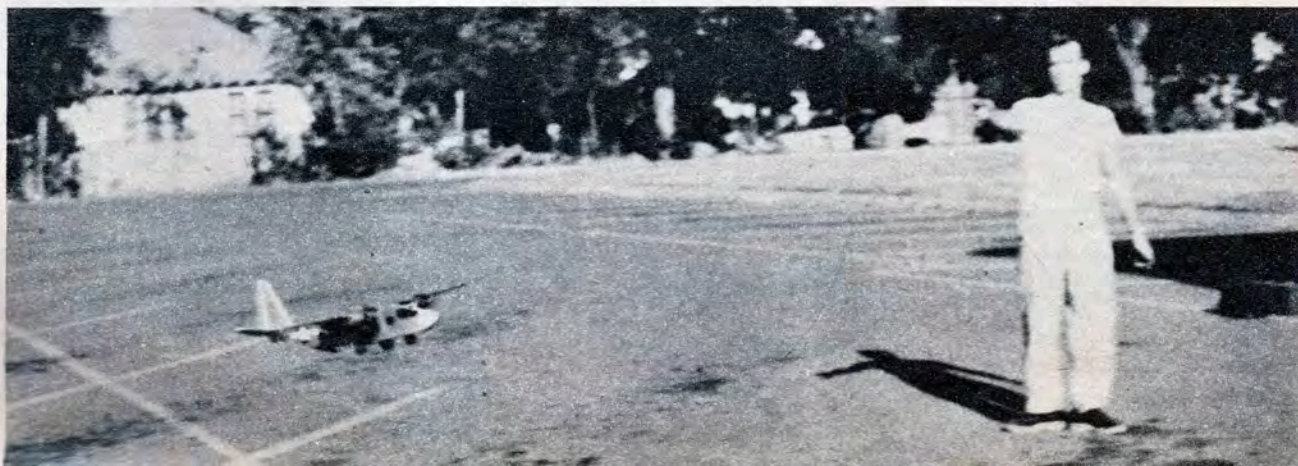
Carve the nacelle tops from the excess balsa left after making the lower nacelle part. Fit to the upper wing surface. Carve cowlings to shape and add 1/16" dowels to position cowlings. Dowels extend through firewall into removable nacelle top and hold it in position.

Cut stabilizer halves from 3/8" sheet and carve to airfoil shape. Shape elevators from 3/8" sheet balsa. Glue aluminum control horns in position and reinforce with gauze. Attach to stab with Sullivan Nylon hinges. Fin and rudder are constructed in same manner as stab and elevator from 1/2" sheet balsa. Note rudder offset to right.

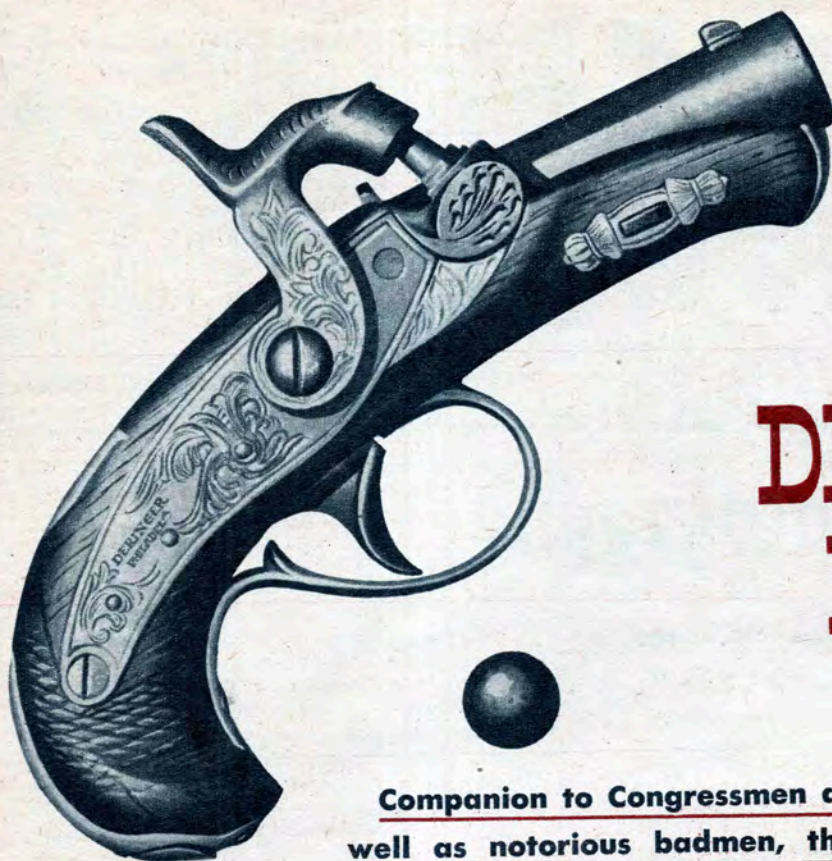
Mount horizontal tail and attach horns to push rod. Glue fin and rudder in position. Glue wing in position and fill in wing cut-out in fuselage with 3/32" sheet balsa. Sand ship smooth and cover with light-weight Silkspan. Spray with 3 coats of Aero Gloss primer, sanding between each coat. Spray 3 coats of silver Aero Gloss for the final finish, sanding between each coat with 500A Speed-wet. Add decals, solder on wheels and complete any other details.

Be sure that you have two good dependable engines if you want to do much flying. The original was powered with .049 Wasps but engines up to .065 can be used. Use 5" dia. props. Always start the outboard engine (Continued on page 89)

Ex-USAF Lt. Atkins, now a civilian engineer with Chance Vought, tries out the C-122 on short lines. Fairchild took over the design.







Probably the most notorious pistol was this .44 caliber Deringer, shown here in full size. Duplicate of gun used to assassinate Lincoln.

# THE DERINGER PISTOL

By J. M. TRIGGS

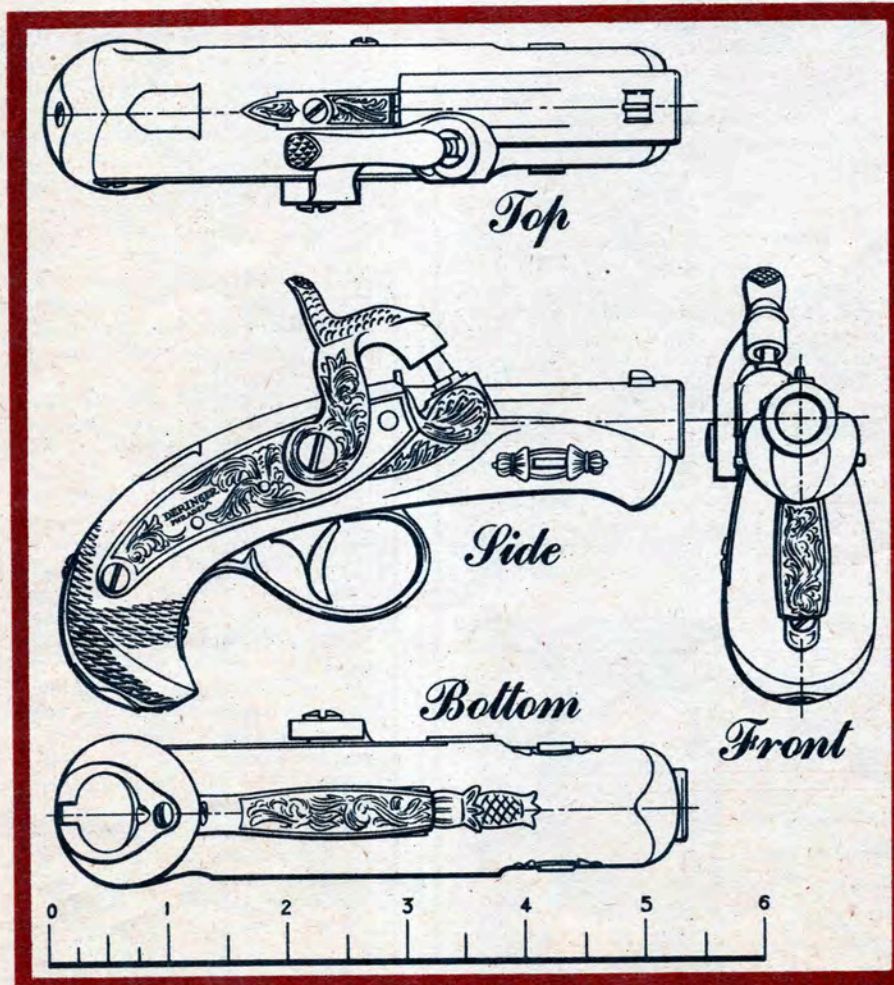
Companion to Congressmen as well as notorious badmen, the original Deringer was the most famous and most copied pistol in mid-1800s

■ In 1806 Henry Deringer, a young gunsmith of Richmond, Va., opened his own gunmaking shop in Philadelphia. There he made many flintlock and percussion guns including Kentucky rifles and large United States military pistols. It was a tiny percussion pistol, however, made between the 1840s and the Civil War, that brought him fame.

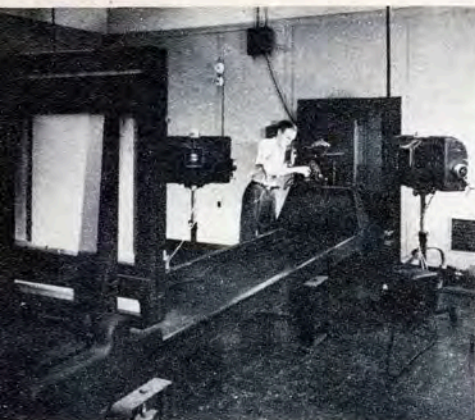
This was a small cap-and-ball, single-shot muzzle-loading pistol. It was made with rifled iron barrels from 1½ to 6 inches long in calibers from .31 to .55. Both barrel and lockplate on this original Deringer were stamped "DERINGER PHILADEL." The weapon was trimmed in German silver and highly engraved. A percussion cap box was contained in the handle, under the butt plate. The model illustrated was made around 1855, is of .44 caliber and slightly over 5 inches long. The round lead ball backed by a black powder charge packed quite a wallop and at distances of from 6 to 20 feet was accurate and extremely lethal.

The popularity of this pistol was due at first to the demand for guns during the California gold rush and later to the westward influx of thieves, gamblers and various other criminals who found such a furtive and deadly weapon well suited to their needs. The Deringer was carried by Congressmen and riverboat gamblers alike. It figured in many notorious duels and shootings, but the most infamous event connected with it was the assassination of President Abraham Lincoln by John Wilkes Booth at Ford's Theater in 1865. The Deringer .44 used by Booth is now in the Lincoln Museum in Washington, D. C.

Many outright counterfeits and fake "Deringers" were produced. Deringer soon was corrupted to "Derringer" and came to mean any small, light-weight, simple handarm of large caliber.







# Careers in Photography

Here is real "pro info"—the fields that are open, what it takes in each, the best opportunities ahead. Part one of a two-part survey

By C. B. NEBLETTE

■ Many of those who think of photography as a career know too little of its possibilities. As a result, they are likely to think only of portrait, commercial or news photography, advertising illustration or magazine photography and overlook other fields of equal or greater promise. This article cannot discuss *all* the possibilities for a career in photography—there are far too many. It will, however, review those in which the largest number are engaged. These are not necessarily the fields with the greatest opportunities but rather with career possibilities for the greatest number.

## PRESS PHOTOGRAPHER

The press photographer is an important man in the world of today, for improved communication between peoples is one of the great achievements of our time and our greatest hope for the future. The press photographer, in furthering the cause of understanding through bringing us face to face with each other wherever we may be through the realism of photography, is one of the greatest

servants of the modern world. It is not surprising that press photography appeals to many young men who want to be where "things are going on," who want in a real sense to be an integral part of the world about them.

The press photographer must be an alert, quick-thinking individual, interested in people, and ingenious in dealing with them. He must know when to be diplomatic and when to be hardboiled to get people to cooperate with him, and he should have wide interests or he will miss many news pictures. The news photographer is not generally subject to the call of the editor at any hour of the day or night as he once was, but one does need both the temperament and the physique to live and be happy with an occupation that keeps him "on the go."

Press photography is not a job for the introvert, for the person who thinks routinely, for the person who shrinks from meeting and working with people, is too retiring to take charge of a situation until he has gotten the picture, or for one who is inclined to worry about things in

general and what he *might* have done in particular.

Most of the large papers are unionized and the Newspaper Guild, a CIO affiliate, includes newspaper photographers along with reporters, editors and all except top management, and the mechanical departments who belong to other unions. The Guild, through its local units, regulates hours and wages. There are not a great many opportunities on the large papers—only when a staff member retires, dies, or when a paper decides to enlarge its staff. The best recommendation you can offer in applying for a job with a paper is a record as photographer for a school or college paper. A good scrapbook showing the pictures you have made and the stories with which they have been used would interest the editor more than your degrees or the courses in journalism you have taken.

There are a great many newspapers including nearly a thousand dailies that do not have a photographic staff of their own. This is not because they are not interested in more pictures—particularly of a local nature, but due to the costs of equipping a photoengraving shop and the salaries of its staff. A simple, inexpensive method of photoengraving would enable many town and village newspapers to picture local events and personalities for its readers. The most successful method thus far devised is the Fairchild Scanagraph. This is now used by about 2000.

The picture magazines such as *Life* and *Look* have pioneered a new form of journalism, the picture story, or the photo essay as it is frequently termed. The picture story begins with a lead picture which, like a headline, presents the basic facts, or setting, for the story. This is followed by a series of pictures which develop the story by revealing additional facts or aspects. The last picture, like the first, is usually run larger than the rest, and sums up the story. All pictures must make the reader stop, see and think. Each must tell its story directly and clearly. A picture which is confusing is worse than no picture at all. Each picture must add to the story, each must be different.

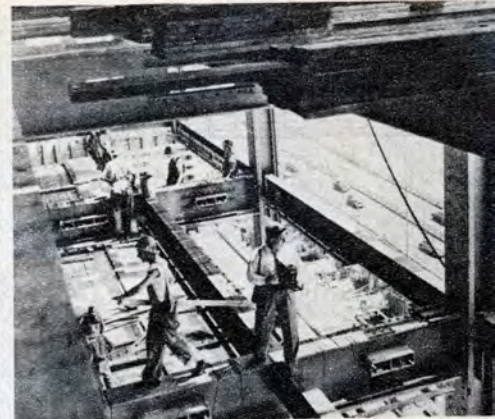
The picture story does not arise spontaneously; it is planned. The actual photography is preceded by research leading up to a shooting script in which the main outlines of the story in picture form are laid out. Even with this as a guide, the photographer finds it necessary to make

## ABOUT THE AUTHOR

C. B. Neblette is Head of the Department of Photography the Rochester Institute of Technology. A recognized authority on photography, he is a fellow of both the Photographic Society of America and the Royal Photographic Society of Great Britain. He has authored "Photography, Its Materials and Processes," "Elementary Photography," "An Introduction to Photography," and "Elementary Photographic Sensitometry."







All photos: Rochester Institute of Technology

many more pictures than will be used. Although he knows that no more than twenty or at the most thirty will be used in the final story, the photo journalist may make a thousand or more exposures to be certain that every possible aspect of the subject has been covered and each in the best possible way.

Top photo journalists, like top advertising illustrators, are few and unfortunately there is little room now for any other than the very best. There is little or no opportunity to begin in a small way and work up to the "big time." The best preparation is as a newspaper photographer, for there you will learn the meaning of news, how to work with people, and how to make pictures of news interest.

The picture story, however, is not limi-

ited to *Life* and *Look*. Better opportunities for the average photographer are in the industrial field for advertising publications, annual reports, etc.

#### COMMERCIAL PHOTOGRAPHER

The commercial photographer photographs buildings, interiors, machinery, construction, show windows, groups, banquets, all kinds of manufactured articles, and machine parts for catalogs.

He must be a good photographer from a technical standpoint and must know how to choose and use various types of equipment according to the job requirements. He must be able to improvise, for much of his work is away from the studio, and he must do the job with what is available. He needs creative imagination to understand the subject and to

visualize the picture that is wanted.

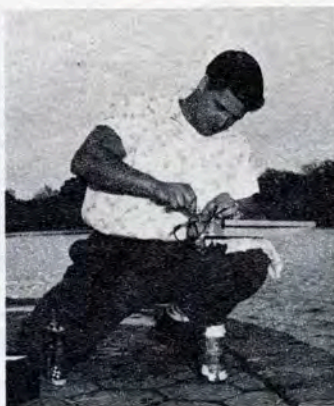
The average commercial photographer leads an active life. He is away from his studio—on location—almost as much as he is in it, and this appeals to those who do not want to be confined to a studio.

The commercial photographer cannot charge for his work on the same level as the illustrative photographer or the portrait photographer and must be content with a lower margin of profit. This means that his gross business must be larger if his studio is to show a profit. A portrait photographer, for example, may make a fair profit on a gross business of \$10,000 a year, particularly if rent and overhead are low, but the average commercial photographer requires at least \$25,000 a year.

The (Continued on page 77)

# Cracker Crate

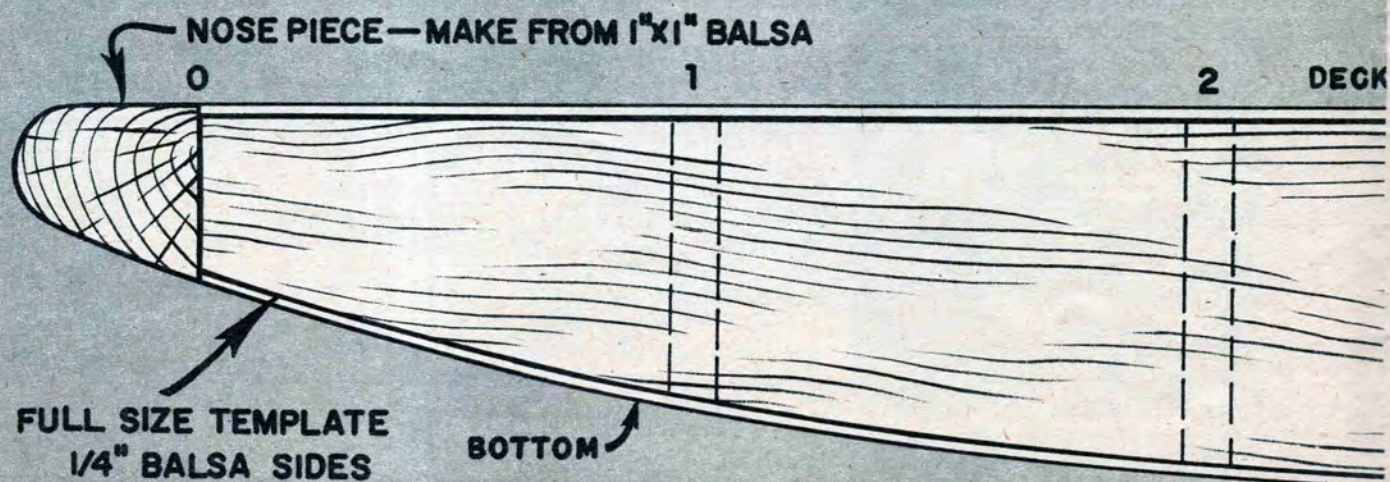
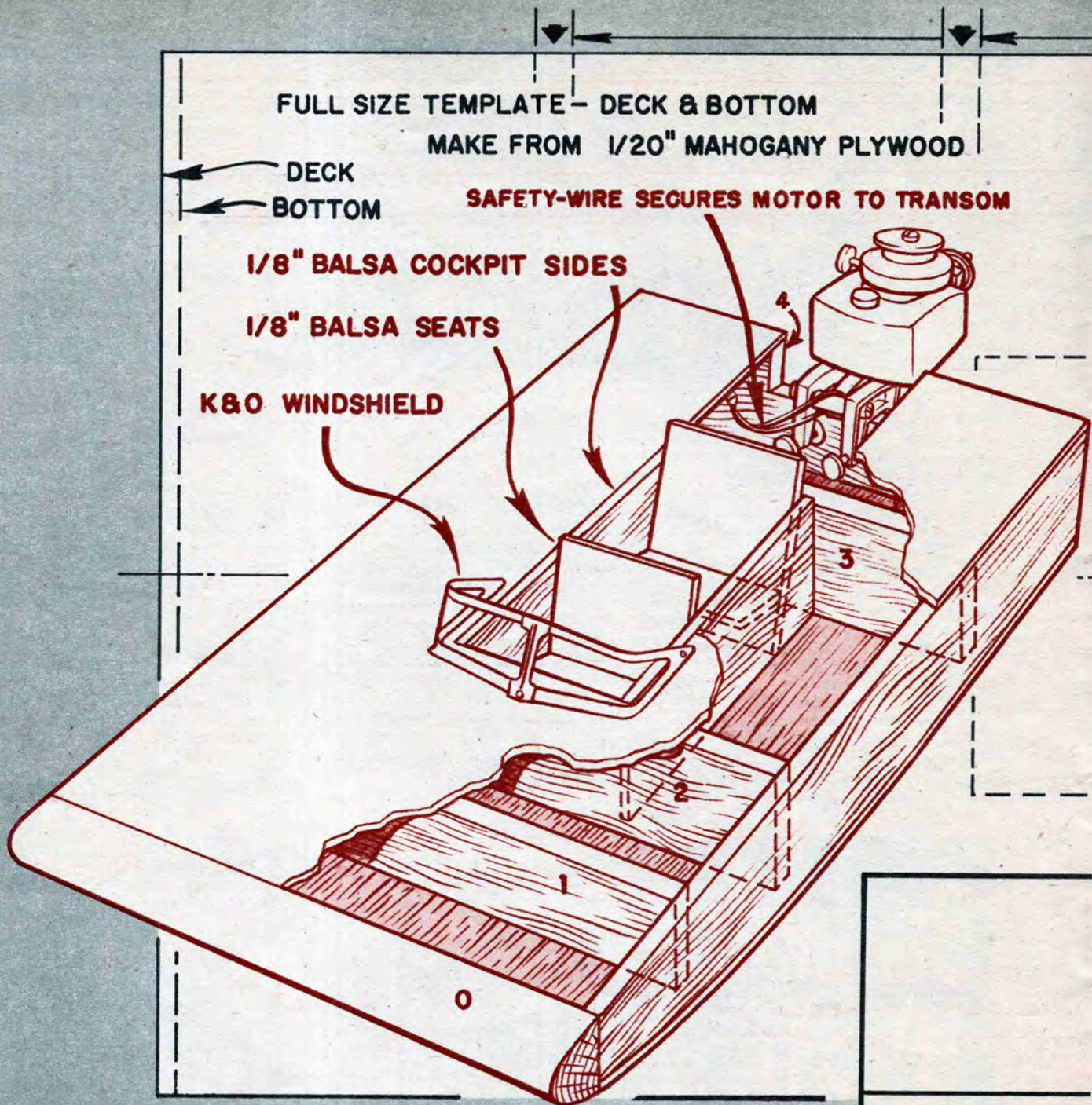
Frank Ehling set out to build the world's simplest outboard for glow plug engines and it appears that he's achieved his goal. Yet there are many special features that makes 'er an outstanding racer



Especially designed for full-size presentation on two pages (turn over to 36 and 37), Cracker Crate is an extremely easy outboard to build and just as exciting to operate as the most complicated conventional design. All wood in the boat is  $\frac{1}{8}$  inch sheet balsa unless otherwise specified on the plans. After cementing together, edge to edge, sufficient sheets of  $\frac{1}{8}$ " to form the top deck, the vertical frames, nose piece and transom are positioned and cemented. When this structure is "dry," the sides and bottom follow. A waterproof paint job is required; don't forget the fuel proof finish unless you should decide to try it with an electric battery powered outboard motor. This is a "free running" design and is not intended for tether line operation. The upswept prow permits it to hop over obstructions and scoot up on the beach. Cracker Crate is fun to operate; build one yourself and see!



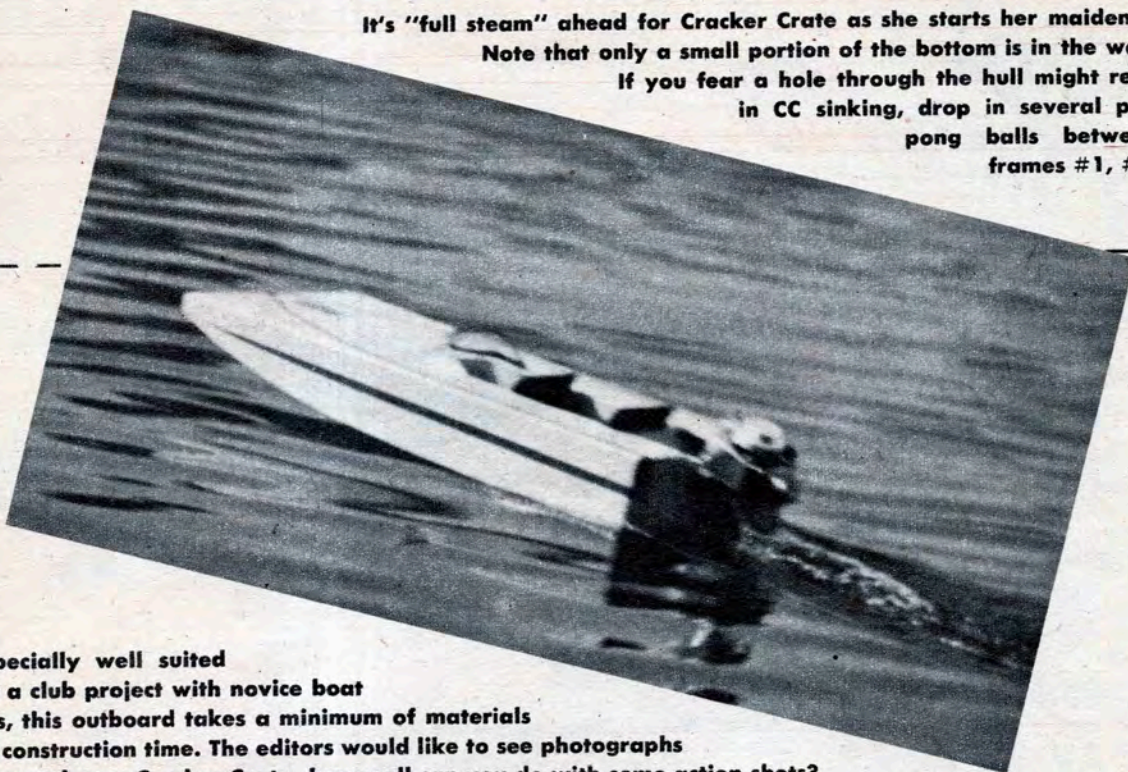






# POSITION OF FRAMES

It's "full steam" ahead for Cracker Crate as she starts her maiden run.  
 Note that only a small portion of the bottom is in the water.  
 If you fear a hole through the hull might result  
 in CC sinking, drop in several ping  
 pong balls between  
 frames #1, #2



Especially well suited  
 for a club project with novice boat  
 fans, this outboard takes a minimum of materials  
 and construction time. The editors would like to see photographs  
 of you and your Cracker Crate—how well can you do with some action shots?

CUT-OUT FOR TOP  
 DECK ONLY

FRAMES

1/4" BALSA

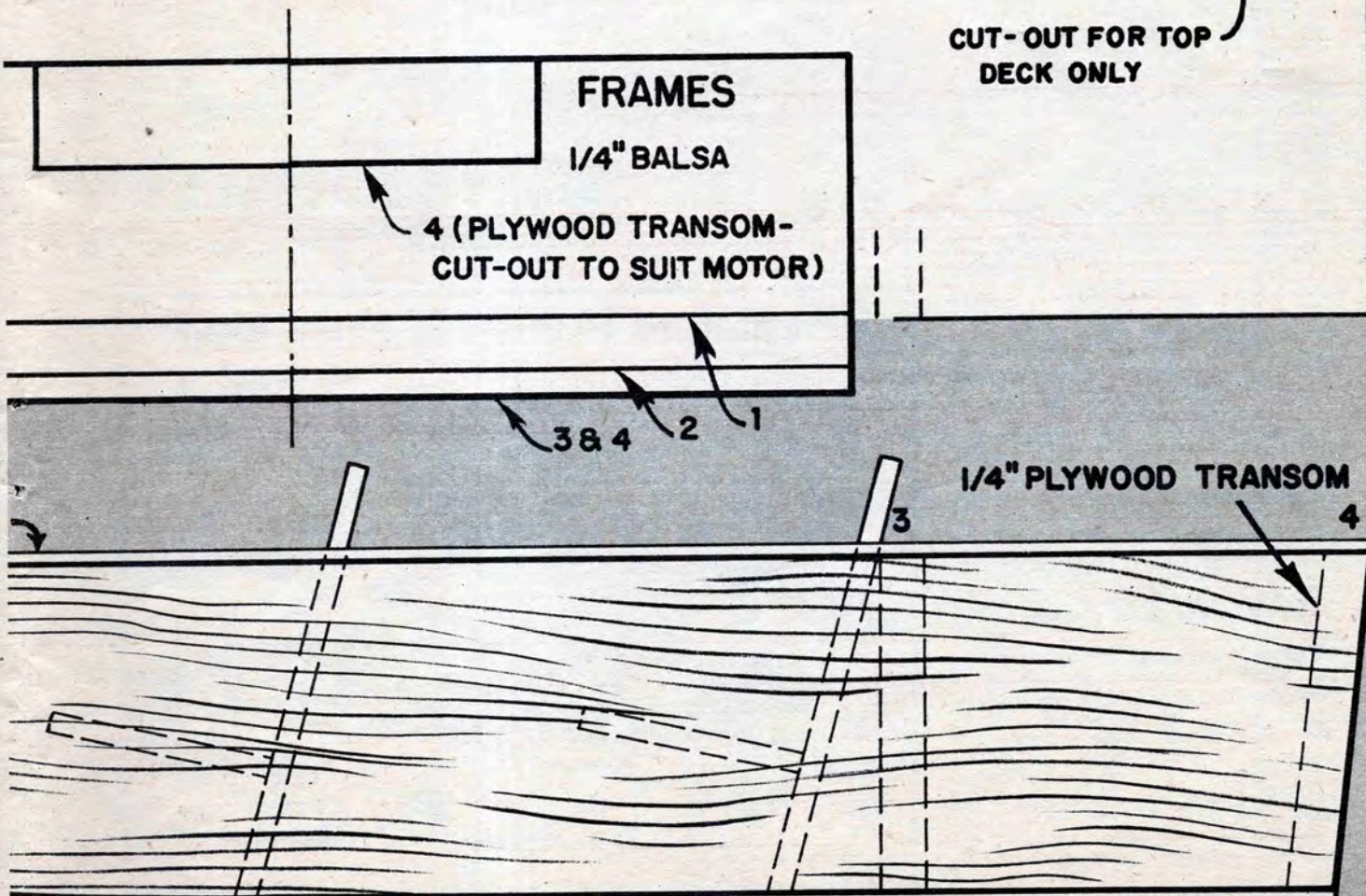
4 (PLYWOOD TRANSOM-  
 CUT-OUT TO SUIT MOTOR)

1/4" PLYWOOD TRANSOM

4

3 & 4 2 1

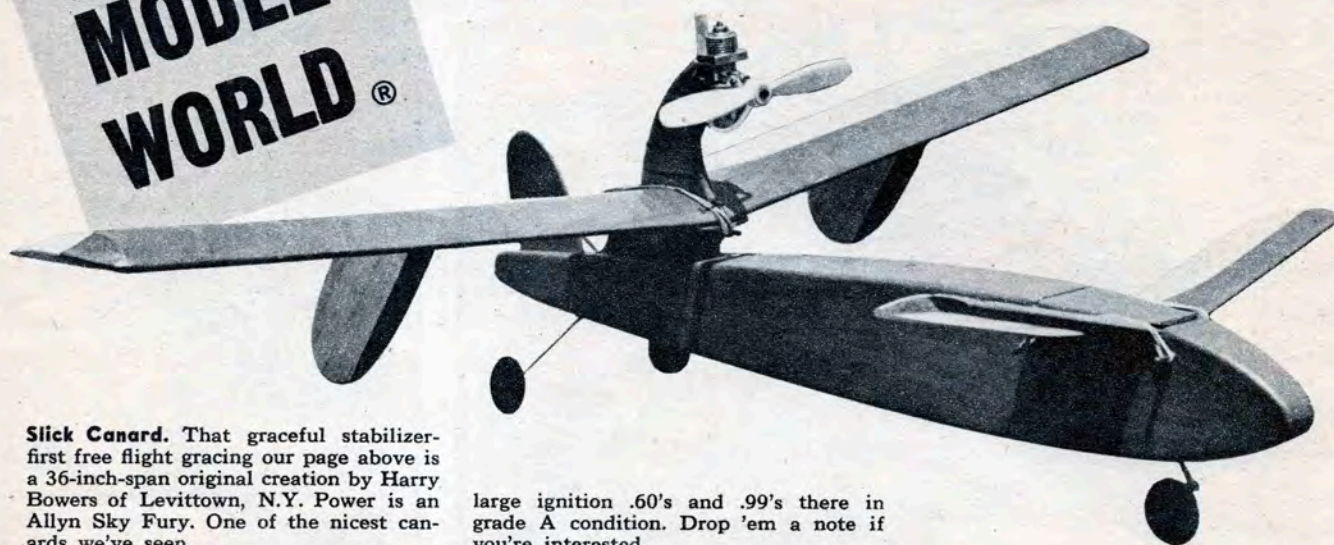
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# HOBBY MODEL WORLD®

Read how model builders have more fun than anybody! News, views and comments by the "Dopester",  
Dick Everett & R. H. Elliott (We pay \$10 for photos)



**Slick Canard.** That graceful stabilizer-first free flight gracing our page above is a 36-inch-span original creation by Harry Bowers of Levittown, N.Y. Power is an Allyn Sky Fury. One of the nicest canards we've seen.

**Calling All 'Copter Fans.** Bob Tennenbaum of NYC has been working with model helicopters and autogiros for several years. He contends that the average air-modeler just doesn't realize how much fun these contraptions can be. Bob feels that if more contests would encourage 'coptering by adding an event for the miniature whirly-birds, there'd be more interest in the class. Probably so—but it's a moot question: which comes first, the event with prizes for the relatively few or a lot of builders clamoring for belated contest recognition?

Be that as it may (you'll note we didn't supply any answer!), Bob has been working on the folks at the NY Mirror to add helicopters to their next big Mirror Model Flying Fair (scheduled for Floyd Bennett Field, Brooklyn, on Armed Forces Day). Bob's suggestion to Eastern 'copter fans is that they let Ted Clodius at the Mirror know that they'd like to see a MMFF division for helicopters.

**Model Films Available.** The Academy of Model Aeronautics has been made custodian of the Plymouth 16 mm. model plane movies. These are real good shows (reel good, get it?). If you want to book any of them contact Carl Wheeley at A.M.A., 1025 Connecticut Ave., N. W., Washington 6, D. C. The Academy can also advise you about bookings for the "OK" Cub movies and the fine Pan American movies of past National events.

**Add Wonderful Names.** We just can't help commenting on that name the Wichita, Kan., Wichihawks Model Airplane Club selected for its club paper: "Hawksquak." Anybody know a better one?

**Large Size Engines.** Quite frequently we get inquiries concerning availability of large engines (above .45 cu. in. displacement), especially some of the old but good ignition jobs. After lots of folks saw those flying scale control line models at the Chicago National meet in '54 we received quite a few letters asking if we knew of a source for such power plants. One that we spotted on a trip to the Nation's capital is Corr's at 812 Ninth Street, N.W., Washington, D. C. Lots of

large ignition .60's and .99's there in grade A condition. Drop 'em a note if you're interested.

And—P.S.—we'd be glad to know of and publicize any other sources of hard-to-get engines and parts for motors no longer in production.

**Wanna Write?** These fellows are looking for pen pals: Harold Gibson, 7 Leicester St., Sydenham, Port Elizabeth, Cape Colony, South Africa—"Would like to correspond with anyone interested in control line flying, speed and stunt"; A. E. Edgebeer, 14 Silverdake Rd., Chorlton-Cum-Hardy, Manchester 21, Lancs., England—"Am a rubber and engine power free flyer, also fly control line stunt. Like to write to someone around 19"; Harry Goodwin, 14, 59 Mascot St., Dorchester, Mass., would like to write to someone interested in full scale aviation.

**CCAMA News.** That's the Connecticut Chapters of A.M.A. we're referring to and their sprightly, informative monthly

mimeographed news bulletin. Looking through past issues we noted that the American Cyanamid Company has donated the use of a tract of land to the Lufbery Circleers. Plans call for two 70' paved circles, screening and a 10 foot pit area between. The town has donated the use of a grader and other firms have given manpower and materials to help make the project a resounding success!

The exciting and thought-provoking film, "One Plane, One Bomb and One City" can be booked through Raymond Ross, 35 William St., Wallingford, Conn. It's about three B-29's making a mock attack from England to New York. New Britain "launched" a model aircraft carrier when at one contest a curved deck area was carefully marked out on grass with a superstructure in the background. Nylon arresting lines attached to small sand bags though hooks were utilized.

## Most Realistic Model—\$25 Award Winner

Winner of this month's "realism" award is W. L. Hoffman of Stroudsburg, Pa., with a fine picture of John Susaywich's F-7C-3 Curtiss Seahawk. Span was about 2 feet, model built to absolute scale. Photo taken at ground level to make subject look like real thing. Give photo data on all entries you submit here.







Under sail and ready to go is Howard "Mickey" Beitchman's Class M "Sunkist" design sailboat. From Wantagh, L.I., he sails with 32-member Salisbury Model Yacht Club. Jaworowski's Class M (see pg. 4) has 800 sq. in. sail, 50" long. Pond is for boats, ice skating.

Most everyone agreed that the land-locked model "carrier" worked as well as the regular built-up affairs with a lot less trouble and expense. Dick Matava won this first contest, incidentally, in a 35-mile wind with a total of 417.91 points.

Wonderful sign in Bridgeport, Conn.: "Hobby Field Reserved For Model Airplanes." Area in 90 acre park was donated by Bridgeport Park Department. To spread Christmas cheer at the Hartford Newington Home for Crippled Children the Greater Hartford MAC constructed a number of model planes for presentation to the youngsters. Question: Are you and your club sharing the joys of modeling with less fortunate young folks in your community?

**Guilow Award to Abrams.** In the event you missed it in news from the last air-model "Nats" Al Abrams, Jr., publisher of the Bucks County Flypaper, was awarded the Paul K. Guilow Memorial Award as the individual who made outstanding contributions to model aviation during the past year. Al is president of the Bucks County Federation of Model Airplane Clubs and secretary-treasurer of the Bristol, Pa., Aeromodelers. In spite of all this he finds time to teach novice modelers how to get their wings.

It was our good fortune to know Mr. Guilow for many years and we are certain he would have applauded enthusiastically the selection of Al Abrams as

the recipient of the Memorial Award.

**Active L.A. Group.** Sponsored by the La Ballona Junior Chamber of Commerce, the Modeleers M.A.C. of Los Angeles is a growing group open to anyone interested in air-modeling. Members have a wide range of interests from control line and Jetex flying to radio control work. The club meets the 2nd and 4th Thursday of each month at the Robertson Center. Club president is Walter Huhn, 9000 National Blvd., L.A.

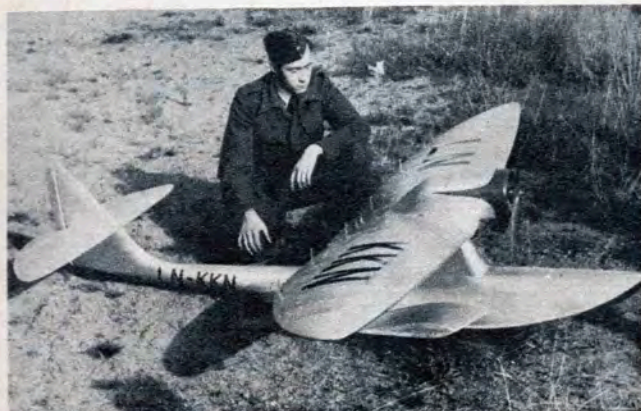
Says Mr. Huhn, "The club has a special area in which to fly at the Hollywood Park race track, including the necessary insurance for proper protection. Some of our activities include: U-Control trainers that are used to start off any member learning to fly, transportation to all major contests in the area, and numerous events for club members. Active in team racing, the Modeleers have lead in the F.A.S.T. club standing during 1954. A year ago the club staged the very successful All California Free Flight Contest."

**Michigan Club Well Sponsored.** In Milan the Aeromodelers have secured the backing of the Kiwanis Club which has now become the official sponsoring organization. Meetings are held at the offices of the Milan Truck Lines; lumber for two long work tables was donated by the Milan Lumber Company! Among

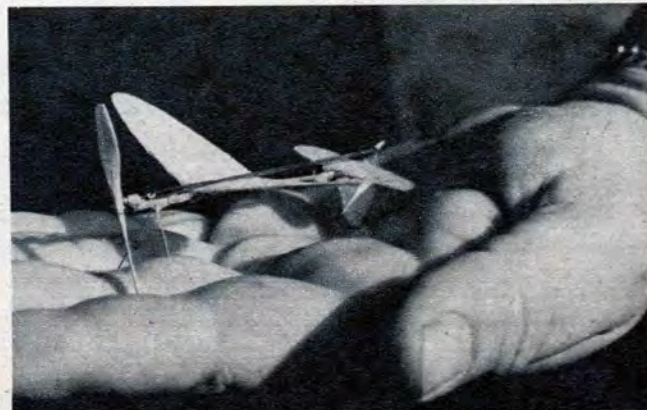
the many active club members we hear of two young ladies, Suzie Burger (rubber powered free flight) and Carol Combs (control line). Bob Burger converted a free flight Scot Free to U-Control (he says he doesn't care for long walks!). Bob used only the polyhedral tips for wings, inverted the pod and powered it with an Atwood .049. Mighty hot is the report. Dave Maricle, the club advisor, has a speedy little biplane powered by an .020 Torp which can be hidden in his hands. The Azalia Flying Club recently affiliated with the Aeromodelers.

**Add Contest Excuses.** When members of the Salt Lake City Ute Aeromodelers went to a rubber-powered endurance model elimination meet in Northern California, they didn't do so good. Wondering why afterwards they supplied the following reasons (among others) to their flying buddies when they returned home: 1) squeaking cables on gold dredges working the American River three miles from the contest site; 2) the clear Northern California air, when their ships were trimmed for Southern California smog; 3) presence of nervous California entrants who rattled the S.L.C. (Pete Bjorklund was detected trying to put an 8/4 Tornado prop on his Nordic tow-line entry); 5) constant kibitzing of California's Champion of Champions who thought the Ute youths and their planes completely intolerable.

Pres. Kurt Neyseth of Canadian Colibris MC, Winnipeg. Built in Norway, this 30 lb. R/C has 10' span. Stubs on trailing edge hold antenna. Motor of 1 hp was made by Kurt; tank in nacelle.



How small? Consider this 3 7/8" wingspan rubber powered R.O.G. by Heigor Chang of Chia-Yi, Formosa. Length is 3 3/16"; all-up weight, 0.35 grams; it is bamboo paper covered, 45 sec. flight.





## HOBBY MODEL WORLD

You gotta admit those excuses are novel, to say the least!

**Help Wanted Section.** Robert Hafele, 648 Capitol Ave., Bridgeport 6, Conn., wants to build a U-Control Grumman F7F Tigercat with retractable gear. Needs plans; can anybody help? Bob also is seeking drawings for Westland Whirlwind and Douglas WWII Skrocket. Hans Redemann, Vienenburg/Harz, Schachtweg 19, Western Germany, is a 26-year-old truck engineer who was sent to Turkey by his firm—found "ATH" in a little shop there—fell in love with Jefferies' scale drawings—is currently building scale Boeing P-29A and North American F-100. Hans, who is an old scale free flyer (one example, an Ardo Ar 196 seaplane model powered by a Kratmo "4" engine), would like to effect an exchange with someone—Jefferies drawings from ATH for you-name-it.

**Tips From Tipton.** Subtitled—corn from Kansas. Bill Wies, president of the Tipton, Kan., Modelairs, pens some pretty interesting stuff. If we reported some of it you'd call us names. So we'd better pass it on to you in Bill's own words.

"I thought I would just drop youse guys a line," writes B. W., "just to let you know what the model builder is doing in Kansas—the 'Wheat State.' Phooey—should be the 'Windy State.' It's so windy none of the model builders out here can do much flying. But when the wind isn't blowing, I got to admit it's a free flyer's dream.

"I dabble in control line some, but free flight is my meat. I built your X-pendable—some plane, nice clean lines. I stuck to the plans and did not deviate. I put a free flight finish on the wing (I do this on all of my models) by dissolving Rit dye in thinner, straining it and mixing with clear dope. You get a real 'mirro' finish. A tip for other modelers: that Pactra pamphlet is very helpful.

"From your mag I have built 'Blow Bug,' a nice, interesting job. The blower

was no trouble at all. Many members of the club said it wouldn't fly at all. It did. No spectacular climb, but it works.

"Also built 'Sassy Saucer'—a real sweet dish. Get it? Dish? Flying saucer? I know, no good. There are two of them in the whole of Kansas (that I know of). I have #1 and my buddy has the other.

"I also fool with radio control. I have a Rudderbug and did have a Bootstraps. I lost it last winter; I think a tube froze! Never did find it. Incidentally, Donald Striet is vice president of our club; Ken-ny Hake is our sponsor—he runs the hobby shop."

**More Pen Pals.** Aussie modeler wants to exchange views and materials with American friend: Leonard A. Bent, 33 Giron Crescent, Geelong West, Victoria, Australia. 20-year-old all-round power modeler (C/L, F/F, Jetex, etc.) wants to swap plans and magazines: D. R. Platt, 97 Inglehurst Gdns., Ilford, Essex, England.

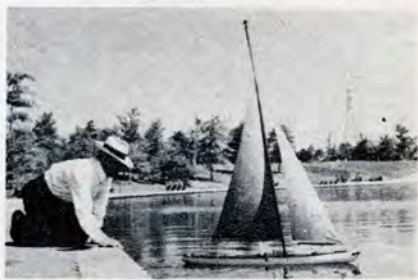
Incidentally, when giving your address if writing to us and especially when seeking pen pals be sure and print—print—print—PRINT—PRINT—PRINT your name and full address. Mr. Platt did so we're sure of his address; Mr. Bent (?) didn't and we're not absolutely sure the spelling is exact.

**Canadian Governing Body.** Ron Hunter writes from Windsor asking for info on the national organization governing aeromodeling in Canada. Ron, all communications, membership applications, rules and record inquiries on air-modeling in Canada should be addressed to the Model Aeronautics Association of Canada, 2109 Bleury St., Montreal, P. Q. Currently serving as MAAC officers are Robert Elliott, president; Howard Allison, vice president; and William Elliott, secretary-treasurer. The MAAC executive committee is made up of Bob Elliott, Howard Allison, Frank Rutland, Frank Lilliman and Lavalle Walter.

For you and fellow Canadian enthusiasts we're glad to give the names and addresses of your "zone directors." Contact your nearest director for information on clubs and contests in your vicinity. *British Columbia*—Frank E. Rutland,



Avid collector of model cars is Indiana's gift to TV and hobbies, Herb Shriner, here with a miniature Stutz Bearcat. Herb uses soft brush to dust off his many vehicles.



Paul Jaworowski again (see pgs. 4 and 39). Looks like he's sailing uphill! His club, Salis-bury MYC, is made up of Nassau, N. Y., County residents. Mighty purty boat, hey?



Small scale "piano" from old piano stool by Helen Armitage, Altadena, Calif., is 16" long, 8" high. Minirecord player inside. Dummy keys were cut from real ones.

See how simple carrier flying can be? Sandbags, cord, and croquet-like hoops plus some smooth grass and you're in business. This is how it's done in Centerville, Calif. Edward Boddy sent along pix.





2344 W. 8th Ave., Vancouver, B. C. Alberta—Thomas Oakenfeld, 331 7th Ave., West, Calgary, Alta. Saskatchewan—Robert Shieley, 66 High St., W., Moose Jaw, Sask. Central—Mrs. L. M. Hockin, 62 St. John's Rd., W., Weston, Ont. South Western—Frank Lilliman, 502 Charlotte St., London, Ont. St. Lawrence—John Cottee, 2077 Palmer St., Ottawa, Ont., and Robert Elliott, 2109 Bleury St., Montreal, P. Q. Eastern—Max Butts, 24 Brunswick St., St. John, N. B.

**O.A.A. Digest.** That's the Oregon Aero-modelers Association news bulletin, you know. Incidentally, any of you air-modelers out Oregon way should check into the O.A.A. if you're unaffiliated. You can get club membership data from Earl L. Cayton, 879 N. Liberty, Salem, Ore. In his bulletin Earl reports Don Santee of the Capital Sky Cats purchased a 46-foot 2-place sailplane. Don didn't have a large enough basement to work on it, so he rented a house with a larger basement! Don's wondering if he can enter a full scale glider in the model Nordic towline event. Among other Digest notes of interest: "I won't light my dethermalizer 'cause this is just a short test hop." Modeler to gal friend: "Honey, you remind me of my model airplanes—you take up all my time, you keep me broke, you keep me up late, you're so unpredictable!"

**Lost a Model Lately?** Maybe you should consider the retrieving system encountered at the Southwest Championships. Horses! Yep, you rented them for \$1 apiece per hour. Whoa, Dobbin, don't step on that Mini Hogan!

**Heard From England.** Via the Society of Model Aeronautical Engineers' "Model Flying" Bulletin. Prediction: Pan American World Airways will probably sponsor in September the largest meet ever held in the British Isles. Location is expected to be Heathfield or Abbotsinch in Scotland. Fourteen events, static displays and exhibitions by the full scale industry, demonstrations and film shows. "Jock" Doughton, Pan-Am's Scottish Manager, is spark plugging the affair. How's about Pan-Am sending the best PAA-Load flyers from the American Nats to compete in Scotland? Whatta prize! Latest world radio control record endurance flight was made by H. L. O'Hefferman of Solcombe, South Devon, last October 7: 2 hours, 31 minutes, 17 seconds. The model landed only a few yards from its take-off point.

The S.M.A.E. Council has decided to print a sizable poster listing the benefits of membership with particular emphasis on the Associate Membership classification. 1,000 copies are to be produced for circulation to hobby shops, exhibitions and so on. Stressed will be the benefits of membership, especially the \$100,000 "third party" insurance coverage. Why doesn't the A.M.A. do something like that here in the U.S.A.?

Following the success of a series of indoor endurance contests for microfilm-covered models, the Indoor Flying Association has been formed in Britain. A news sheet will be distributed to members containing data on British and American records, contests and designs. Interested fans can contact C. S. "Rushy" Rushbrooke, 38 Clarendon Road, Watford, Herts., England.

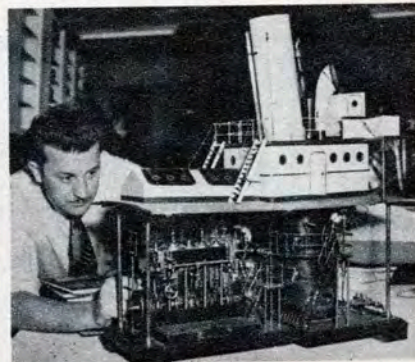
Still very much alive and active is the Low Speed Aerodynamics Research Association. Information on this worldwide group may be obtained from T. Dorricott, 84 (Continued on page 90)



Meet Corning-Elmira, N. Y., Flying Sparks R/C Club. W. E. Bliss, center, bottom, pres. Most members operate on 27 1/4 mc. At meetings hams, electronic engineers speak, rigs are discussed. For info contact sec. H. L. Hartson, W. Hill Road, Elmira.



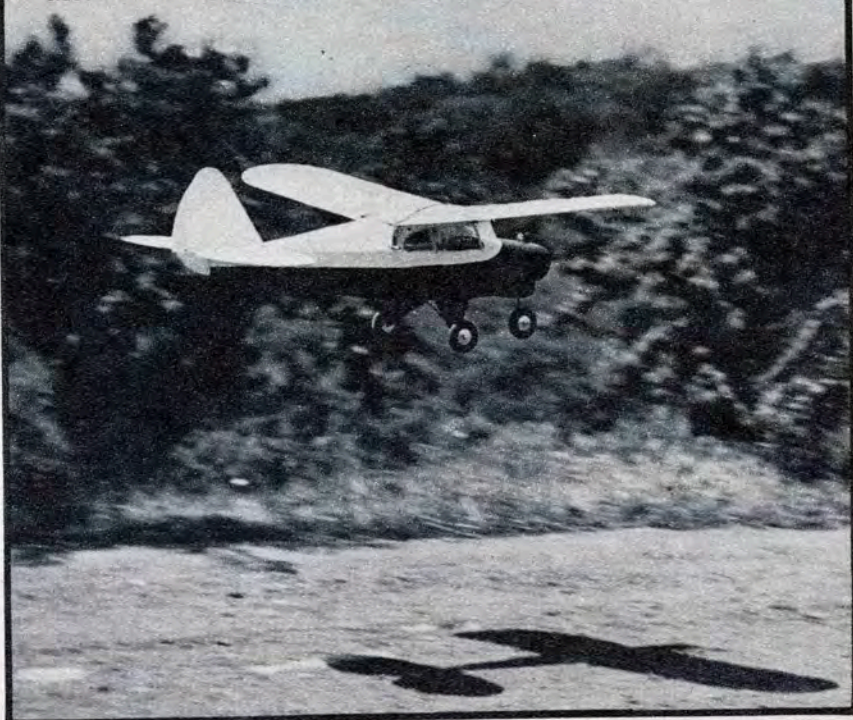
C. T. Holbrook, aero engineering instructor at Mississippi State College, with flying wing research Jetex model. It has diffusor wing tips for better L/D.



Paris' Miniature Working Models Show exhibitor makes adjustments to scale ship engine. For our money this takes the cake; in fact, we give him entire bakery.

## Hobbies in Action — \$25 Award Winner

Dale Holtzmann of Toronto, Ohio, captures the twenty-five bucks this issue with his fine photo of Dan Allison's Tri-Pacer in full flight. Dan is Toronto Thunderbugs pres. When last seen model was headed in general direction of West Virginia; still lost along with Fox 29. When submitting pictures be sure and include data on camera, film, exposure, opening, paper that was used, etc.



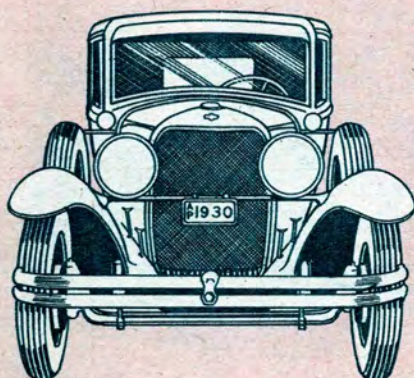


# AUTO Progress

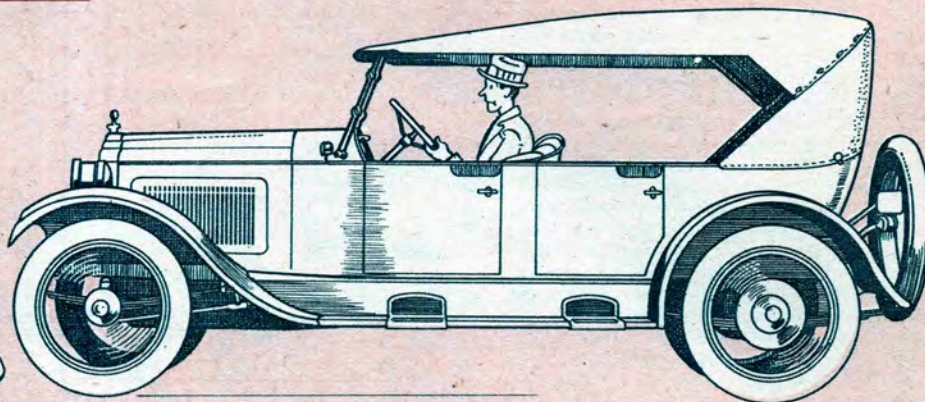
By DOUGLAS ROLFE

## The Willys-Overland Story 1929-1954

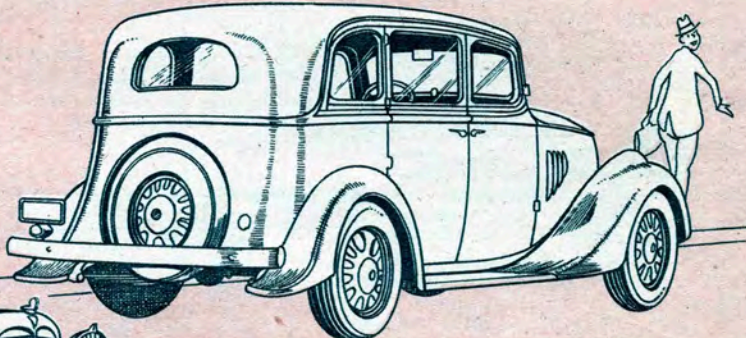
Having successfully recovered from the depression slump, it gained a place among major car builders



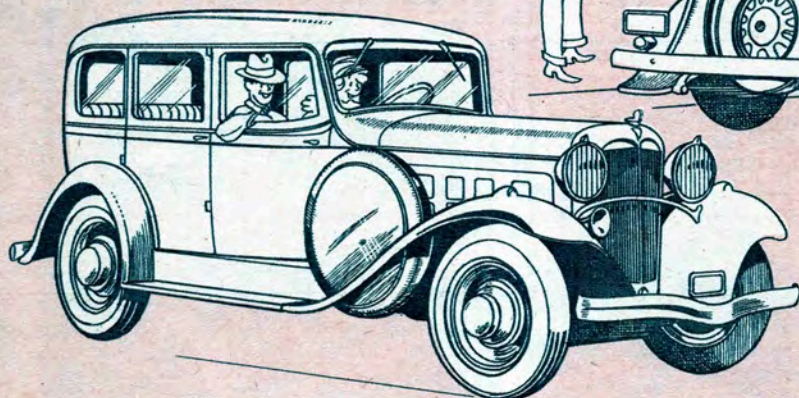
Handsome was the word for first Willys straight 8, the Model 8-80 produced in 1930. Large headlights, fine frontal appearance were features of this model.



Beautiful, symmetrical lines characterized the silent, sweet-running Willys-Knight touring car of 1929. Company boasted that no Knight engine had been known to wear out. Fully equipped, with "one-man top," it cost \$1,195.

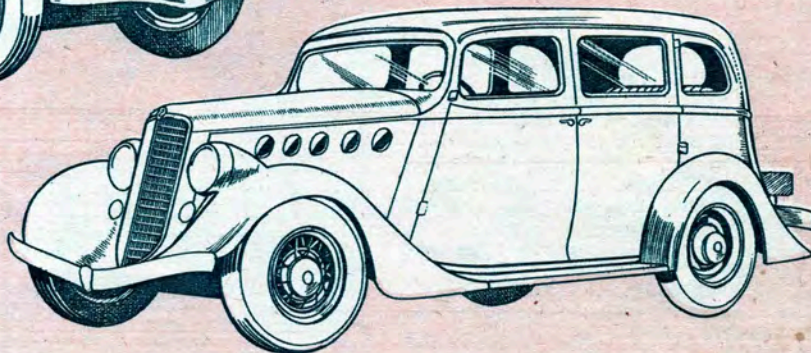


Extremely low price made the unlovely 48 hp four-cylinder Model 77 a good buy in 1933. It was firm's main effort to recover from bankruptcy. Price, \$445!



Last sleeve-valve Willys-Knight developed 87 hp. Produced in 1932, it lasted three seasons, cost \$1,395.

Portholes are by no means new in body styling, nor were they new when Willys adopted them in an effort to jazz up the awkward-looking Model 77 in 1934. In 1935 the last of this series sold for a mere \$415!

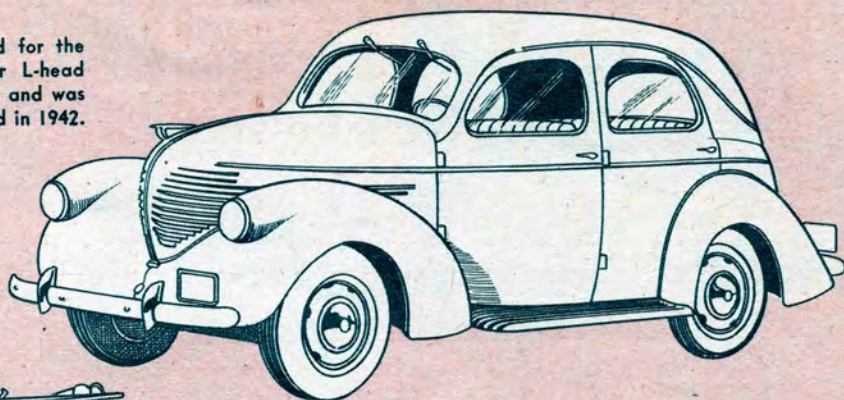


During the early 30's the Willys company was beset with bankruptcy troubles. The sleeve-valve Knight was dropped, and effort concentrated on a small four-cylinder car. This model 77 was unhandsome, but so low-priced that by 1936 the firm was again on its

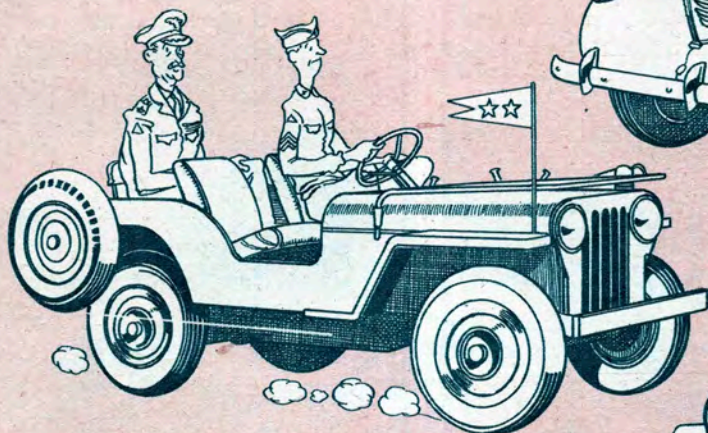
feet. With the development of the military Jeep in WW II, it staged a complete comeback. The little four-wheel-drive Jeep operated in all theaters of war, and along with the old Model T Ford is one of the most fabulous cars in automobile history. After



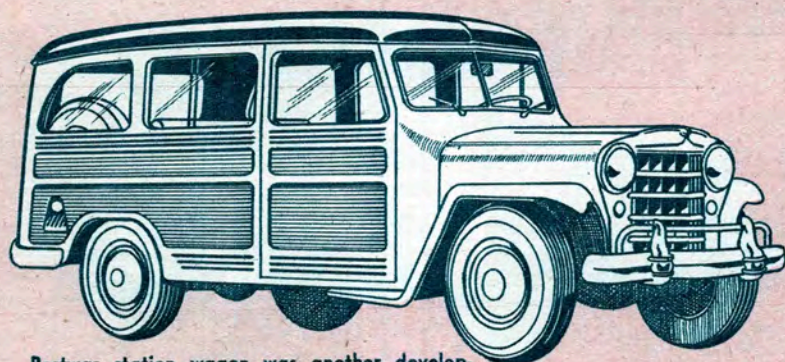
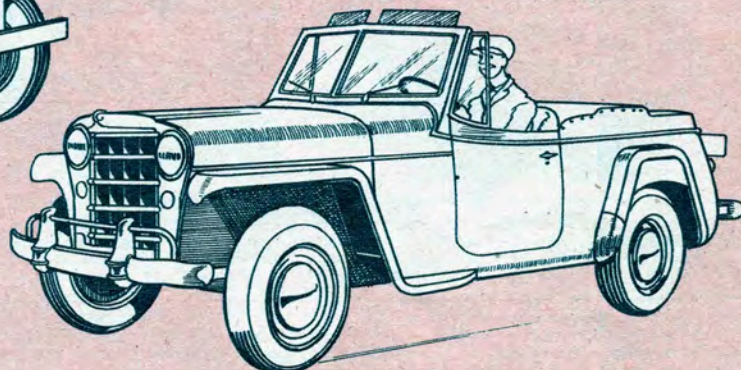
1938 Bantam was yet another Willys bid for the low-price trade. It had a four-cylinder L-head engine, advanced (for the period) styling and was prototype of the Willys Americar produced in 1942.



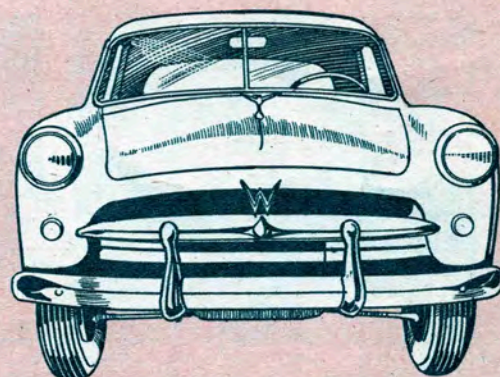
Post-war Jeepster was a civilian development of the Jeep. Sport convertible model shown was smart looking but never really caught on.



The fabulous Jeep produced with various minor modifications throughout World War II was, as befitted a military vehicle, externally starkly simple. The innards were somewhat more involved. Four-wheel drive allowed it to operate under even the most rugged conditions.



Postwar station wagon was another development of the famed Jeep. This model had four-wheel drive, independent springing and introduced the 70 hp L-head type engine.



First really new Willys design in ten years, the 1952 Aero Eagle had an F-head six-cylinder engine developing some 90 hp.



Present-day Aero-Willys is refinement of 1952 Aero Eagle.

the war Willys sought to cash in on its popularity and developed several commercial models based on the original Jeep. Most successful of these were the station wagons. However, as the Big Three gradually brought out radically different postwar models and as

the sellers' market declined, Willys was forced to present new models of its own. The present Aero Willys with its efficient six-cylinder engine resulted, a very handsome car with low-slung lines. In August 1953 Willys-Overland was acquired by Kaiser.



# Shop Projects That Pay: House Signs

■ For both decoration and identification house signs are a natural fund-raising project for your hobby club, scout troop or civic club. Name signs on lawns affixed to stakes, suspended or mounted on exterior walls, fences or doors or even made for a youngster's room or the den are popular everywhere. With volunteer ("free") labor available it's fairly customary to charge a customer double what your materials cost you. Thus if your wood, paint and letters cost 83¢ (let us say) you'd price your product at about \$1.75. That comes out to considerably less than a commercially-made sign, yet gives your club funds. Know your costs beforehand; show samples; quote prices; ask for a small deposit; give a receipt; meet your promised delivery date.—H. W. Yates



Quite often a house sign can be made doubly attractive by symbolism. Here, for example, the resident's name, Casey, suggests the famous railroad song "Casey Jones"—hence the old-fashioned locomotive is an apt background. The "loco" is cut on the jigsaw from a piece of plywood, and can be painted or just varnished to suit one's taste. Letters can be traced from display type found on signs and posters or extra bold headlines in newspapers.



In this case "Mitten Letters" were applied to 1/4-in. colored plexiglas sheet. These letters and numerals are made of a ceramic tile-like material and are sold in white color only, but may be painted. Some come equipped with long pins in back, to be attached to soft background such as insulating board, others have extended lower rails that fit into tracks or channels, and a third type has a plain back for affixing with adhesives such as Borden's "Elmer's Glue All."



One-inch-thick white pine board is cut to pre-sketched shape on a jigsaw. The wood is sealed with one coat of brown shellac. Lightly sand in order to obtain a smooth surface. Two coats of enamel, black and white, are applied. The letters and numbers cost 19¢ each and are tacked to the wood with small brass pins supplied to fit into factory-punched holes in each letter. Bronze, they form a good contrast against the black and white background colors.



Modern motif is achieved by the jet plane silhouette cut out of 3/8-in. fir plywood on a jigsaw, coated with brown shellac and lightly sanded. The letters are cut from gumwood plywood (easiest to work on jigsaw), and their thickness is the same as that of the back panel. They are fastened to the "plane" by fine brads which are countersunk and puttied over. Several coats of clear varnish, with intermediate sanding, are given to the complete panel and letters.



Piece of 1/2-in. fir plywood jigsawed to shape is given three coats of brown shellac for contrast with light colored letters. Lightly sand between each coat. Drying time is approximately 30 minutes. Two coats of light, transparent varnish are then applied (24 hrs. drying time). Sand gently before the final coat. Letters are of white plastic with imbedded glass beads costing 40¢ each. They are fastened by small brass escutcheon-type nails, through holes in plastic.



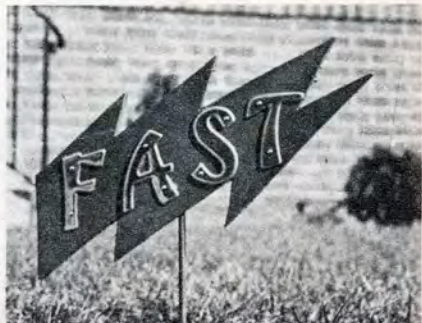
The rustic pattern is cut into ends of the 1x4" piece of white pine with hand saw. Brown oil stain is applied to the board and wiped off; after which board is sanded lightly and painted with two coats of clear varnish. The letters are cut out on jigsaw from gumwood. Reflective tape, such as used on automobile bumpers, is cut in strips narrower than the letters and is then applied so the light tone of the wood shows up as a border.



The shamrock symbolizing Mr. Murphy's Irish descent is jigsawed from a one-inch white pine board on which the design was sketched. A coat of brown shellac seals the wood which is sanded before two coats of green enamel are applied. As in the case of Hatoff, same type of letters and numerals are used which come with brass nails and are pre-punctured. They are finished in a bronze color. For those who want it, brass is available.



This sign consists of two superimposed pieces, the large one of 1/2-in. poplar cut to shape on jigsaw and treated with several coats of clear varnish with intermediate sanding. The smaller one is cut from 1/4-in. plywood, stained with blue oil stain and wiped dry. A white coat is applied over it, wiped and rubbed to give two-tone character. Letters are "Reflexite" by Reflexite Corp., made of plastic with bronze-like finish. Also available in silver. Cost 25¢ each.



Lightning-like figure is quite appropriate for the name "Fast." General procedure in making this name plate is the same as for "Murphy" and "Hatoff." Color is of course up to the individual's taste. Letters are metal with nickel-finish and cost 17¢ each. One important feature in making these signs is to properly seal the wood in order to protect it from moisture; this is especially true with commercial plywood whose laminations otherwise soon are apt to separate.



# AUTO DESIGN COMPETITION

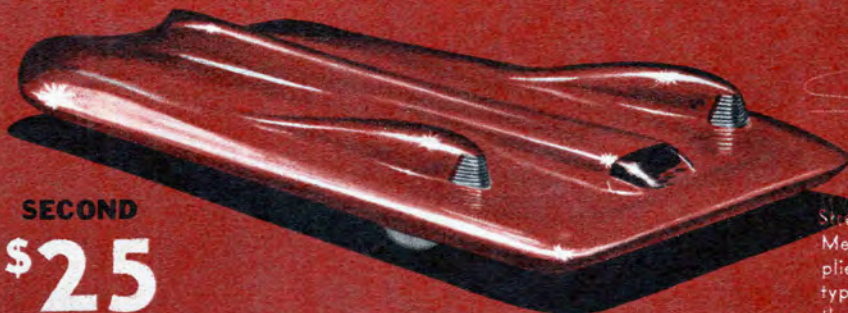


**FIRST**  
**\$50**  
**AWARD**

Special body for the Rolls-Royce by Jerry Voss of Conway, Ark. The styling is aimed at the American buyer, incorporating all the luxuries which distinguish the "marque," plus air conditioning. Fenders have two sets of headlights, one for city and the other for country driving. Though modern in design, the style still tends toward conservative.



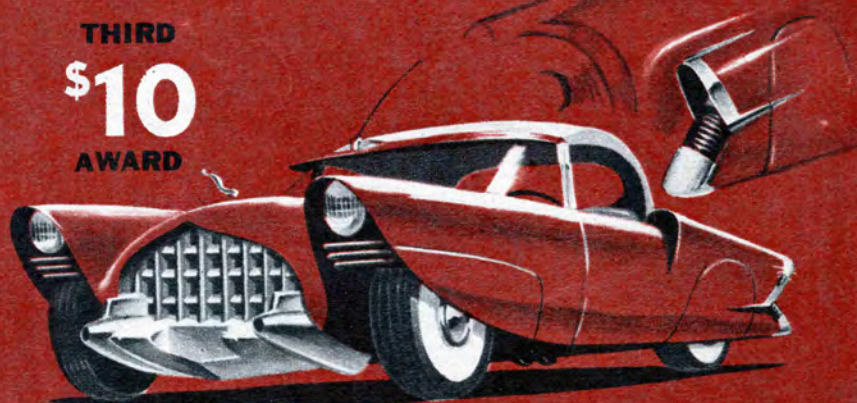
**SECOND**  
**\$25**  
**AWARD**



Streamlined record car by F. Bruce Metzger of Patton, Pa. Power is supplied by two-eight-cylinder opposed-type engines mounted in the rear. For the sake of better streamline, the driver lies prone. Two air inlets on each side of cockpit are for the purpose of cooling the brakes. Two large exhaust exits are in rear fenders. Body airfoil shape.

Custom Sport Coupe by Albert Mirabella of East Orange, N. J. Cut of the front fender has that new "forward look" and provides cooling for brakes, as does the scoop on the rear fender. Position and styling of tail light (in small sketch) enable it to be seen from the side as well as from rear. Roof is leather covered wraparound windshield.

**THIRD**  
**\$10**  
**AWARD**

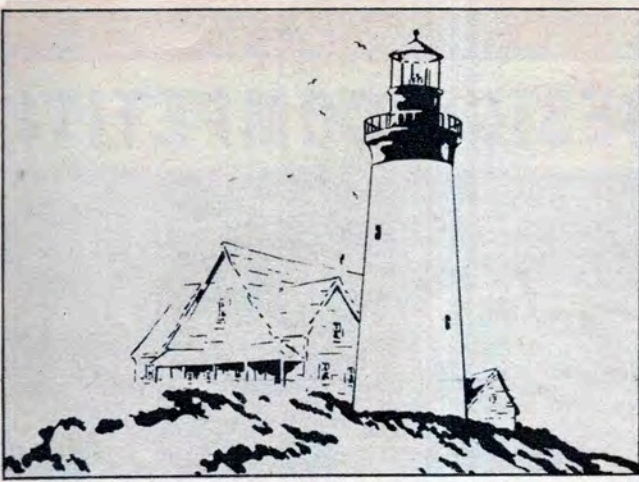


**It's easy to enter—**  
**All types are eligible:**  
**restyled passenger cars,**  
**original sport jobs, hot**  
**rods, or military types.**

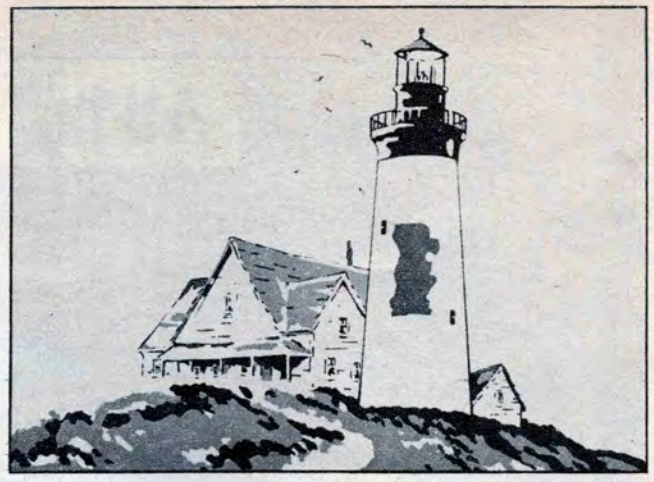
**AWARDS OF \$50.00—\$25.00—\$10.00 EVERY ISSUE**

Cash awards will be made each issue for the three most significant auto designs submitted to this magazine. \$50 will go to the top design, \$25 to the second and \$10 to the third. You may submit sketches for an original design auto, for a restyled car, for sportscars, family sedans, record cars, hot rods, military vehicles or unusual trucks. Include side, front, rear and top drawings, plus sketches of the proposed vehicle from three-quarter front and three-quarter rear positions. Sorry, we cannot enter into any correspondence about this contest. Send entries to Auto Design, c/o Air Trails HOBBIES For Young Men, 304 E. 45th St., New York 17, N. Y.





This is the plastic sheet as you receive it in a Silloo set with the "blacks" already printed in place along with positioning guide marks.



Here we have the first color (#1) Dark Red and the next (#2) Dark Green painted on plastic following areas from Charts A, B.

# New Silhouette System of Oil Painting Makes Every Young Man an Artist

**Prominent engine manufacturer and designer astonishes art world with new system of pre-sketched painting**

Age is no barrier with this "no number" pre-sketched paint method. Oldsters find it easy on the eyes; youngsters can improvise without ruining picture.

■ One of the most remarkable new developments in the field of oil painting and one that permits individuals with no previous art experience at all to duplicate magnificent full-color subjects is the "Silloo system," the silhouette method of oil painting.

As remarkable as the process itself is its inventor, Charles Brebeck of Herkimer, N. Y., known far and wide, not as an artist or art leader, but as the head of a large manufacturing organization which produces hundreds of thousands of miniature glow plug and compression ignition ("diesel") engines every year.

In the field of creative arts the new Silloo oil painting method is considered a big step beyond the pre-sketched numbered paint sets and considerably closer to the fine art field. Actually, no previous art background is required of the Silloo painter; he may or may not have had experience with the numbered paint sets since the Brebeck silhouette painting system is entirely different and (*Continued on page 75*)







Medium Red is next as you follow your Silloo guide chart "C". Charts are lettered to follow paint listing: 1 is A, 2-B, 3-C, and so on.



In black and white reproduction you miss the fine gradations of tone that come. Medium Green and Light Red have been added.



We begin to build up the sky background now with the application of Dark Blue. oil paint. Entire picture starts to take shape.



Brown is the next color you work with—it's the seventh color in your palette and to apply it you just follow the guide chart "G."



Although our black and white camera almost missed it, light green has been added; a good amount of it is used throughout picture. This color is called Corn; you apply a lot of it to give sunlight on clouds and house, also along edge of lighthouse. Nearly done now.



Comes now Light Blue which appears in the sky and on one side of the house. This is the 9th color (plus black) now on plastic. With the final color White and then an overall coating of Opaquing Paint to lend finish and luster you've completed painting.







## Pint-Sized Radio Control Semi-Scale

# Mini Missile

Tiny but tough, this little R/C design has astounded the experts throughout the Southeast. With good wind penetration characteristics, it's a windy weather flyer.

By **STEPHEN L. SNYDER**

■ This radio-controlled craft is a fast sport and stunt model. It makes realistic R.O.G. take-offs and is very stable. This model features a sliding canopy which facilitates radio tuning and has a shock-absorbing rear landing gear. It is powered by a Cub .074 diesel. The swept-back rudder design makes the plane stable in the turn. However, if you do not like the sweep-back, all that is necessary is to sweep back the rudder hinge line and make the rudder conventional. The model carries a Mini-Mac receiver which has given excellent results.

Mini-Missile has been a real show-stopper wherever it has been exhibited and flown. Spectators do not believe their eyes when they see the wonderful penetration and flying characteristics. The design is simple and very easy to build. As for its looks and style, the photographs give you a general idea.

The craft is fast and performs almost every maneuver that the present-day high wing models do. R.O.G. take-offs are terrifically realistic. Both original and final contact are made by the rear gear. For this reason, the rear gear is shock-mounted, and not the nose wheel, as is usually the case.

In building the body it must be noted that the balsa blocks are first tack-glued to the side assembly and are shaped and sanded to the outside dimensions. The blocks are then taken off and hollowed out to the inside dimensions, approximately  $\frac{1}{8}$  to  $\frac{5}{32}$  of an inch. The block on the bottom of the nose is done in the same manner.

The tapered ribs in the wing and tail are made by placing wing rib blanks between the root rib and the tip rib. The blanks are roughly carved down to the root and tip guide ribs which are made from  $\frac{1}{8}$ " sheet. Stab construction is similar.

Probably the most difficult construction detail is that of the planking on the bottom of the wing. The best way this can be explained is to say that the planking goes from the bottom of the first rib outboard of the dihedral break, across the center section to the bottom of the rib on the opposite wing. Because the planking is flat, to facilitate landing gear mount-





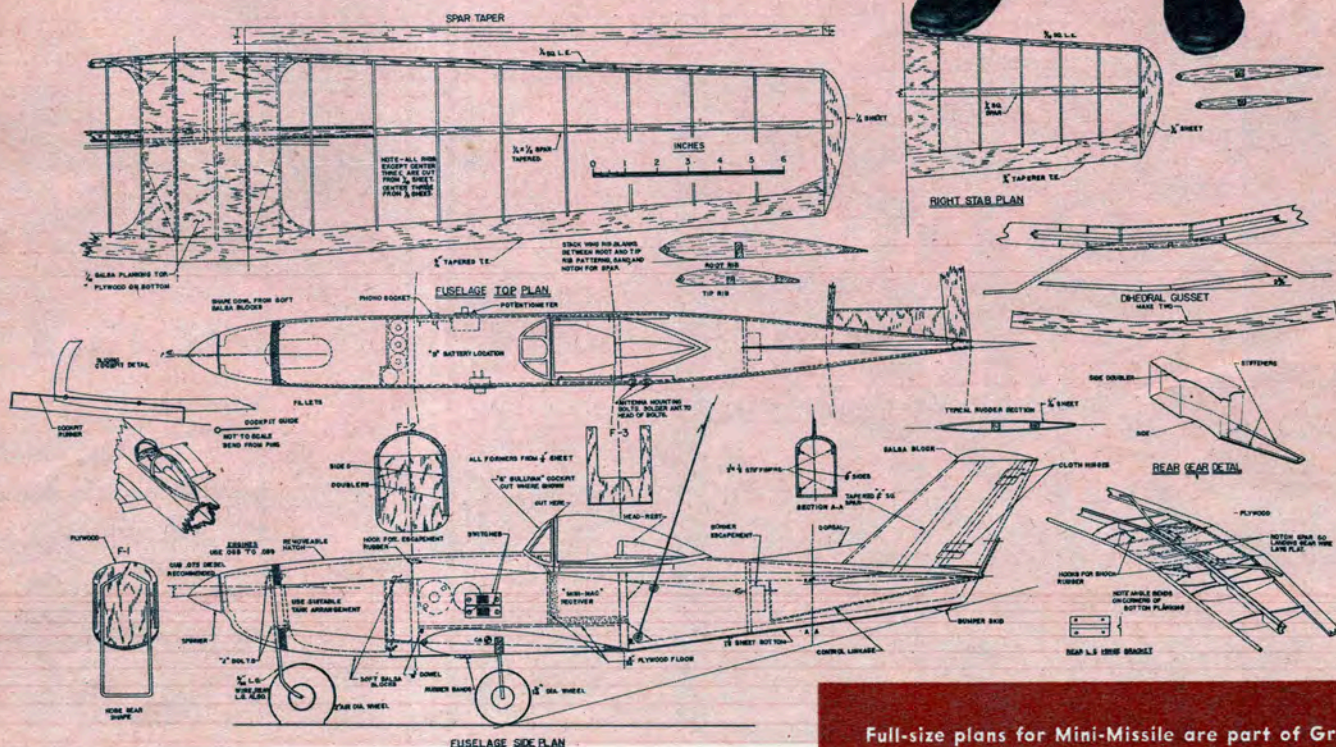
ing, this can be done only in one way—cutting the bottoms off the center ribs so that five center rib bottoms are in a straight line. This, naturally, will put the planking below the level of the spar. Therefore, the plywood planking is done in two pieces, one forward and one aft of the spar. The corners are cracked and bent to make them fit the dihedral break at the leading edge and trailing edge. The spar is left protruding through the planking. Notches are cut in the spar level with the planking so the landing gear can lie flat.

The notches also serve to keep the landing gear from sliding in the mounting brackets.

A note concerning the l.g. itself. The location of the landing gear is not accurately shown on the side view. It should be positioned  $\frac{1}{4}$  to  $\frac{1}{2}$  inch behind the C.G. The rear gear must be of sufficient length to make the model assume its indicated ground angle. This is imperative for good R.O.G. take-offs. The wheels used on the rear gear are Banner type. The nose wheel, as noted, is an air wheel.

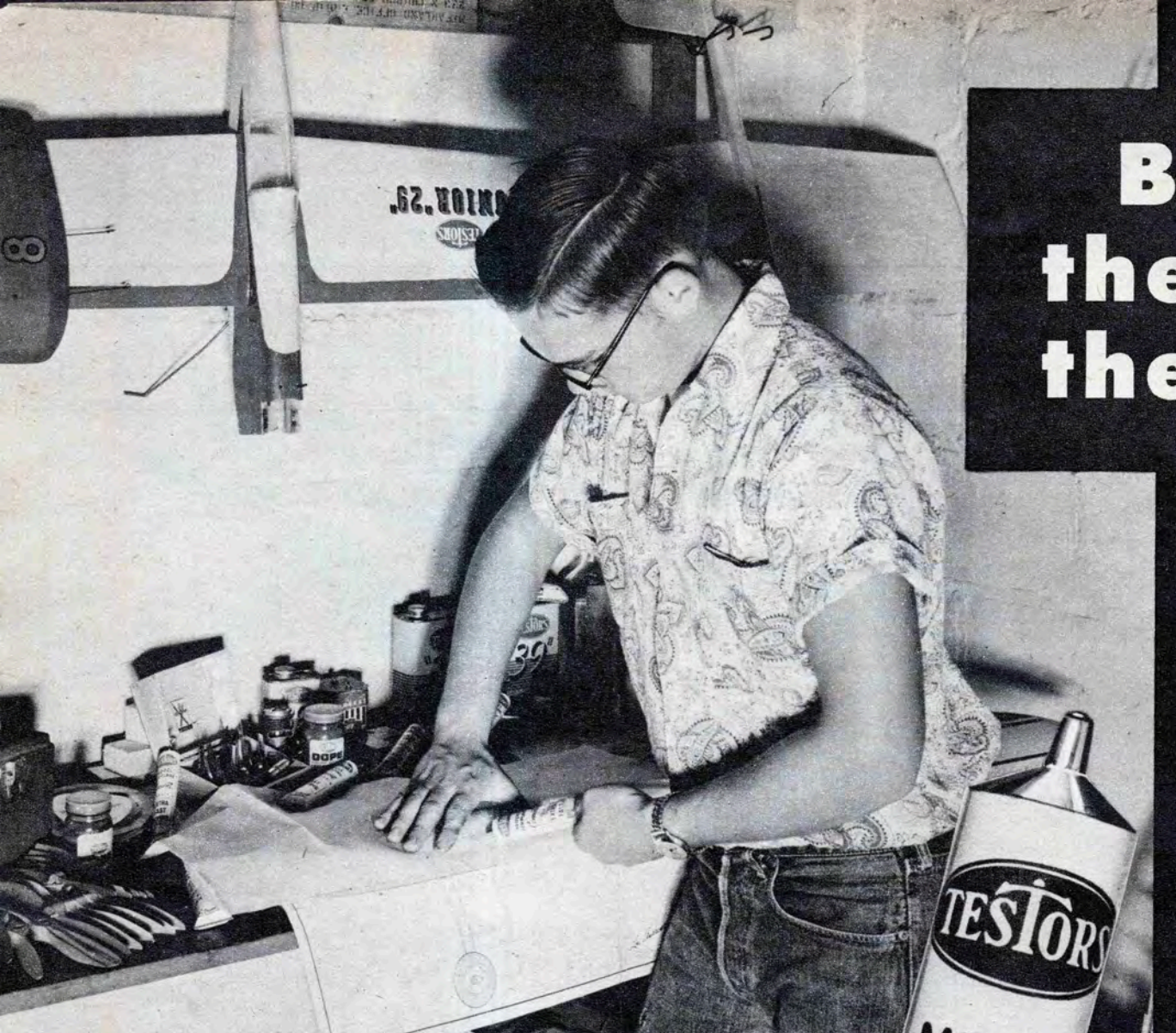
To cut the "Sullivan" cockpit the following procedure was used. Using a sharp X-acto knife, score the cockpit along the separation line both on the outside and on the inside. It is not necessary to cut all the way through, about half way being sufficient. Then, carefully take the canopy in both hands (one holding one side where it is to break and the other hand holding the other side of the cockpit), with the inside of the canopy facing yourself, and apply downward pressure on the ends and upward pressure at the scored line. The cockpit will break in two, very neatly, at the scored line.

The cockpit sliding detail is as follows. The cockpit canopy slides on two wire "rails" attached to the fuselage. It is held to these rails by pins embedded in the plastic. Cut the head off a pin, bend the blunt end in a small circle. Heat the point of the pin and push it through the canopy from the outside at front right. With loop upright against the plastic the point of the pin ( $\frac{3}{32}$ " of it) is bent at a right angle and heated. When hot the pin is bent (Continued on page 65)



Full-size plans for Mini-Missile are part of Group Plan #255 from Hobby Helpers, 770 Hunts Point Avenue, New York 59, N. Y. (50c).





**Be sure  
you're using  
the right  
glue for  
the job**

## FORMULA

*Fast-drying; the  
best for balsa or hardwood  
metal to metal  
metal to wood  
general work.*

**TESTOR  
CHEMICAL  
COMPANY**

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## FORMULA "A"

*Extra-fast drying for quick,  
easy construction of light-  
weight models and for on-  
the-spot repairs. Guar-  
anteed Hot Fuel Proof.*





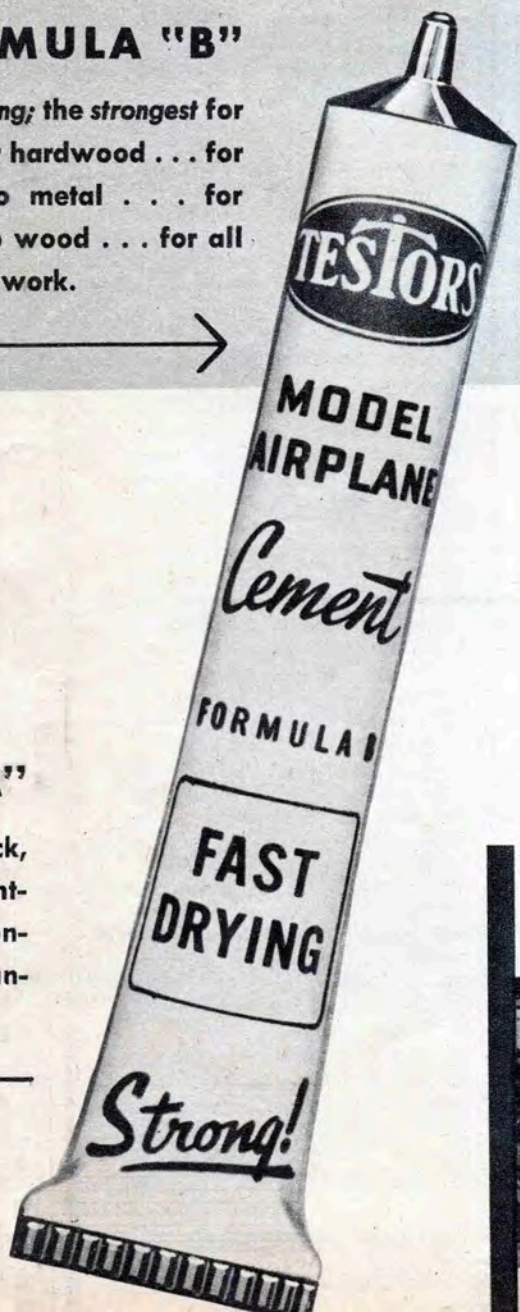
**Be sure you have  
right cement for  
job to be done...**

**TESTORS**

**For Modelers Who  
Want the Best**

**FORMULA "B"**

...drying; the strongest for  
... or hardwood ... for  
... to metal ... for  
... to wood ... for all  
... eral work.

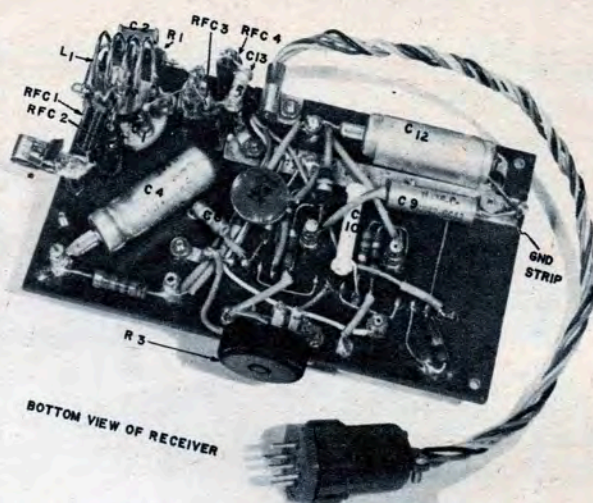
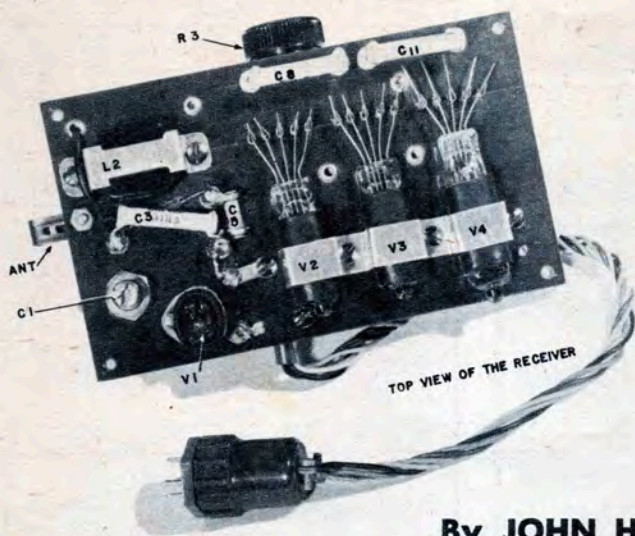


**"A"**

... quick,  
... light-  
... for on-  
... uaran-







By JOHN HAMBLEN, W3TIK

## Radio Control On The Technician's Band: 220 MC. RECEIVER

**Flash the good news to all R/C fans—here's a rig for a perfectly wonderful frequency that most everybody's overlooked. Avoid the crowd, hams, try 220!**

Radio control has grown to such proportions that the number of modelers trying to operate on 27¼ mc. is getting unwieldy, even at Sport flying sessions. It seems smart to utilize every spot frequency or band we can, therefore, so that as many models as possible can be put into use at the same time. Aside from the "Citizen's Radio" spots of 27¼ and 465 mc., the ham 50 mc. band has been quite widely used, but there are other ham bands which offer real possibilities—one of them being 220 mc., and construction of equipment for this band is described herewith. "220" has the added incentive that it is a legal band for the Technician licensees; and as another suggestion, the same circuits shown herewith might well be adapted to the 144 mc. ham band, thereby affording another frequency for the Novice licensees. Let's spread out, men—THE EDITORS.

■ If you'll spend a little time to learn the code at only 5 words per minute, and can pass a rather simple technical test, we have the answer for lots of unhampered radio control activity—the ham 220 mc. band. Regular amateur activity in this band is limited, and from several viewpoints it offers excellent possibilities for R/C. In addition to reduced possibilities of interference from other transmitters, 220 offers other advantages. Antennas are much shorter, for one thing;

the average 27¼ rig uses a 9½-ft quarter-wave vertical, many of which are none too efficient, while on a 220 transmitter you can use a very efficient half-wave radiator measuring only 2 ft. or so. Receiving antennas can be short, too.

The equipment to be described has given excellent results, and should be easily duplicated by any ham; it can be used legally by those with any class of ham license, except Novice.

**Receiver.** The receiver circuit consists of a super-regen detector V1, two audio amplifier stages V2 and V3, and a relay tube, V4. Use of two audio tubes actually doesn't increase current drain to any extent, for the filaments of these tubes are connected in series; they take only .625 V. each—don't connect them across the full A voltage!

The receiver is designed to operate on a modulated signal, with the RF signal from the transmitter turned on continuously. The detector tunes from about 220 to 225 mc., and is essentially a Colpitts oscillator. RF chokes in the filament leads aid in removing hand capacity effects when you are tuning. R1 and C2 determine the quench frequency, in this case about 50 kc. L2 and C3 form a resonant circuit which passes the audio modulation through, but bypasses most of the quench voltage to ground. Further filtering by R2 and C5 removes the remainder of the quench voltage.

V2 and V3 form a straightforward

audio amplifier, the output of which is directed to the grid of V4, a triode-connected relay tube. The original receiver was used with an 8000 ohm Sigma 4F relay, but any resistance from 5000 to 8000 will do.

**Construction.** The receiver, minus the relay, is mounted on a 4 1/16 x 2 5/16 x 3/32" thick linen bakelite base, the layout being shown full size on page 53. Many of the components are identified in the photographs. In the bottom view, V1 and its tuning circuit is at upper left. The tube is put through a hole cut in the base, and the leads are clipped short and soldered directly to its circuit components; this form of construction cuts lead lengths and stray capacity to a minimum.

L1 is four turns of #18 wire wound on the shank of a 3/8" drill, and spaced out to fit across the stator terminals of C1. The plate lead runs to the nearest stator post of C1, while R1 and C2 go from the other stator post to the grid lead of V1. RFC2 connects to the exact center of L1, and RFC1 is attached one quarter turn from this center tap toward the grid end of L1.

Don't think you are seeing a mistake, in the way RFC1 is placed in the circuit; it is used as an antenna coupling impedance, and provides just the right amount of coupling for reliable and non-critical operation. Be sure to use the exact choke specified in the parts list.

Both RFC3 and RFC4 are mounted vertically, the lower ends being soldered to tie points; eyelets in the chassis will serve for the latter. Tie points or eyelets are used at other points to anchor loose ends of some of the small parts.

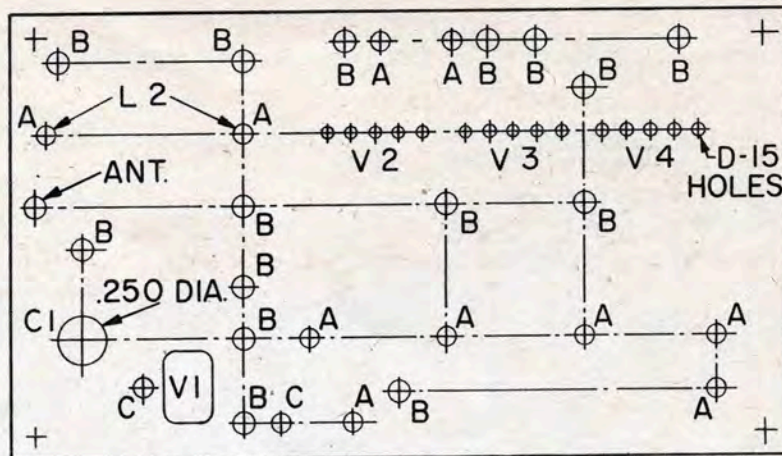
Note in the underside view that there is a thin metal strip running 2/3 of the length of the base; this serves as a ground strap, and if made thick enough, can be tapped to hold the screws that fasten the aluminum tube clamp. The gain control, R3, is held on a small aluminum bracket.

**Adjustments.** All the tubes in the receiver are intended for use on 1.25 V., so if you expect to use regular dry A cells, a series resistor of 0.82 ohms is required. Open the plate lead of V4, and turn on the power. A meter in series with the

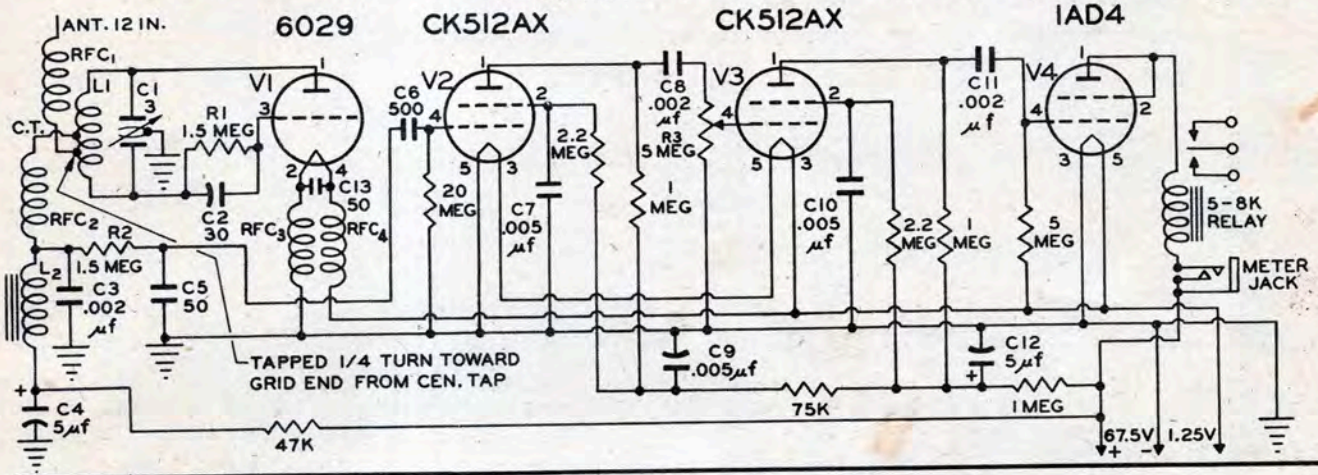


B plus lead should show about .6 ma. Touch the grid end of L1, and note if the current jumps to about 3 ma. Then turn C1 through its full range; if the meter reading stays at about .6 ma., all is well.

Now complete the plate circuit of V4, putting a 5 ma. meter in the lead to the relay. With R3 at about mid-position, the plate current meter needle should vary rapidly from about 1 to 2 ma. Turn the transmitter on (with the modulation on) and tune C1 to see if you can get a sharp dip in plate current. With the transmitter tuned in, turn R3 toward the low side till the plate current of V4 is about 1 ma., then increase it slowly, until further increase fails to reduce the relay current. The meter should now read about .1 ma. and this is the correct setting of (Continued on page 88)



Full-size top view of receiver chassis; 1/16" thick linen Bakelite. For holes use following drills: A—#38 (.101); B—#31 (.120); C—#42 (.093); D—#52 (.063).



# JOB CAREER SCHOOL GUIDE FOR YOUNG MEN

**Wildlife Management**—Have you considered this field as a career? During the last twenty years it has gained steadily in importance, and more and more colleges and universities are adding courses relating to it. Some wildlife training is definitely an asset in the growing business of wildlife photography, as well as to the artist who paints and draws animals. Sportsmen-writers for newspapers and magazines who have technical training in wildlife are apt to enjoy an edge over those lacking it; today, more than 50 million Americans read outdoor literature of some kind—the increasing audience is getting more hep all the

time, and those engaged in satisfying its curiosity must keep pace. Fur and game farms and wildlife-experiment stations need trained personnel with a knowledge of breeding, feeding, diseases—the various elements that affect production.

Local conservation officers or wardens, administrators in migratory-bird refuges, the men concerned with wildlife in relation to forestry, flood control, soil conservation—all these will benefit from, or must have, formal training. And in wildlife research, such phases as improved harvesting techniques and habitat requirements will see development in the years ahead.

In other words, specific study will be a help to you whether you become a professional trapper or breeder, a game warden, an employee in the business of making or selling sporting goods, cameras or binoculars, or whether you enter professional wildlife work. In the latter area, such Federal agencies such as the Fish and Wildlife Service, the Forest Service and the National Park service have a demand, though necessarily a limited one, for men trained in wildlife subjects. Fish and game departments of most States use these professionals as well.

As to training: Comparatively few colleges and universities offer degrees in wildlife management as such; most schools giving the equivalent of a major in wildlife do it in the departments of forestry, agriculture or zoology. Following is a partial list of colleges and universities offering wildlife training, as compiled by Daniel L. Leedy of the U.S. Fish and Wildlife Service. It is suggested that those interested write to these schools for information on courses available. The location is given in the paren-

theses in each case:

Alabama Poly. Institute (Auburn); U. of Alaska (College, Alaska); U. of Arizona (Tucson); U. of Calif. (at Berkeley, Davis and Los Angeles); Humboldt State College (Arcata, Calif.); Calif. State Poly. College (San Luis Obispo); Colorado A & M (Fort Collins); U. of Conn. (Storrs); U. of Fla. (Gainesville); U. of Georgia (Athens); U. of Idaho (Moscow, Idaho); U. of Ill. (Champaign); Southern Ill. U. (Carbondale); Purdue U. (Lafayette, Ind.); Iowa State College (Ames); U. of Kansas (Lawrence); Louisiana State U. (Baton Rouge); U. of Maine (Orono); U. of Mass. (Amherst); Mich. State College (East Lansing); U. of Mich. (Ann Arbor); U. of Minn. (Univ. Farm, St. Paul 1, Minn.); U. of Missouri (Columbia); Montana State U. (Missoula); Montana State College (Bozeman); U. of Nebr. (Lincoln); U. of Nevada (Reno); U. of New Hampshire (Durham); Rutgers U. (New Brunswick, N. J.); Cornell U. (Ithaca, N. Y.); Syracuse U. (Syracuse, N. Y.); No. Carolina State College (Raleigh); Ohio State U. (Columbus); Oklahoma A & M (Stillwater); U. of Oklahoma (Norman); Oregon State College (Corvallis); Penn. State U. (State College, Pa.); U. of Rhode Island (Kingston); So. Dakota State College (Brookings); Texas A & M (College Station, Tex.); U. of Texas (Austin); Utah State Agricultural College (Logan); Virginia Poly. Institute (Blacksburg); State College of Wash. (Pullman); U. of Wash. (Seattle); U. of West Va. (Morgantown); U. of Wisconsin (Madison); U. of Wyoming (Laramie); U. of British Columbia (Vancouver); Ontario Agricultural College (Guelph, Ontario); U. of Toronto (Toronto 5).

**What's Your Rank?** We mean in high school, mister, not in the service. According to how they stand in their class, H.S. seniors are eligible to apply for some nice juicy scholarship plums of varying size as offered by Elizabethtown College in Pennsylvania. If you graduate first or second in your class, you're eligible for the \$1,000 academic scholarship available at the rate of \$250 per year. Next in size is the \$800 award (\$200 per year) open to those who rank in the upper tenth of their class. Finally comes the (Continued on page 90)



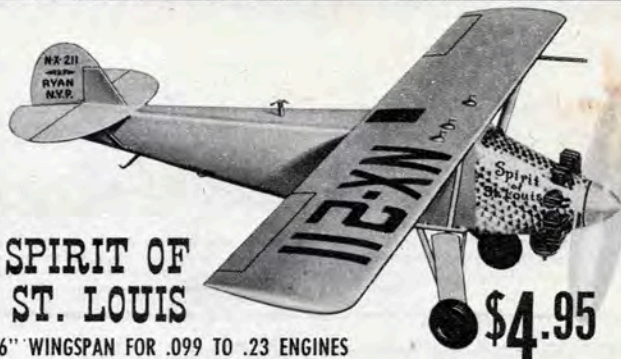


## NORTH AMERICAN TEXAN AT6

18" WINGSPAN FOR .035 TO .074 ENGINES

**\$1.95**

Here's our authentic scale replica of the world famous U.S. Air Force AT6 Trainer. The Navy calls it their "SNJ". Modelers everywhere call this exciting control-liner a real "thriller". The completely prefabbed kit includes: carved balsa fuselage, formed wing, cowl, etc., etc.



## SPIRIT OF ST. LOUIS

26" WINGSPAN FOR .099 TO .23 ENGINES

**\$4.95**

If you're an A or B class engine fan . . . this is your model. It's our extremely popular "SPIRIT OF ST. LOUIS" . . . the most famous airplane in the history of aviation. Authentically scaled, of course! Deluxe kit is 100% complete, with a carved balsa fuselage, 1-pc. airfoiled wing, etc.



### F-82 Twin Mustang \$2.95

SPAN: 18" For .035 to .074 Eng. No. Amer. fighter model powers with 1 or 2 engines. Prefabbed, with 2 carved fuselages, 2 cowls.



### LITTLE MUSTANG \$1.95

SPAN: 18" For .020 to .074 Eng. Famous escort fighter model. Completely prefabbed. Features carved balsa fuselage, formed balsa wing.



### LITTLE SABRE \$1.95

SPAN: 18" For .020 to .074 Eng. In honor of the F-86 (Sabre Jet). U-Control model. All parts cut and shaped for easy assembly.



### LITTLE STINKER \$2.50

SPAN: 16" For .020 to .074 Eng. Betty Skelton's (PITT'S SPECIAL) championship stunt flyer. Highly colorful . . . all prefabbed model.



### LITTLE MERCURY \$1.50

SPAN: 18" For .039 to .074 Eng. Carved fuselage model, an excellent U-Control flyer. It's completely prefabbed. A cinch to assemble.



### WACO CABIN \$1.50

For .020 to .049 Engines. Imagine! This carved fuselage bi-plane "beauty" for only \$1.50. It's semi-scale. Prefabbed for U-Control.



### MONOCOUCPE 90A \$1.50

SPAN: 18" For .035 to .074 Eng. Scale model of America's favorite private plane. Prefabbed kit includes carved balsa fuselage, formed cowl.



### LITTLE BIPE \$1.50

SPAN: 16" For .020 to .074 Eng. Carved balsa fuselage bi-plane . . . prefabbed for easy assembly. It's control-line. A real value!



### SPORT RACER \$1.50

SPAN: 18" For .020 to .074 Eng. A good U-Control performer at a remarkably low price. Completely prefabbed kit. Easy to assemble.



### LITTLE DEVIL \$1.50

SPAN: 18" For .020 to .074 Eng. An economically priced U-Control model. Prefabbed parts include: formed balsa fuselage & wing, etc.



### BEECHCRAFT "17" \$2.95

SPAN: 16" For .045 to .099 Eng. U-Control, prefabbed model has carved balsa fuselage, formed balsa wings, metal cowl, etc., etc.



### BOEING P-26A \$2.95

SPAN: 18" For .020 to .074 Eng. An excellent control-line flyer. Prefabricated kit is complete in every detail . . . all parts finished.



### BOEING F4B-4 \$2.95

SPAN: 17 1/2" For .020 to .074 Eng. Brand new deluxe U-Control model. 100% complete with carved balsa fuselage, wings, etc.. A real "honey".



### CURTISS HAWK \$2.95

SPAN: 17 1/2" For .020 to .074 Eng. Deluxe U-Control model. 100% complete - with carved balsa fuselage, wings, etc. Easy to assemble.



### BEL AIR \$2.95

SPAN: 18" For .039 to .099 Eng. A control-line flyer that's loaded with flying thrills. Prefabbed model has all parts finished.



### F-86 SABRE & F-51 MUSTANG -- Both for \$1.50

Our sensational 2-in-1 kit. Contains two complete, realistic profile models. Both control-line flyers take .020 to .074 engines . . . both have 18" wingspans. Not one, but two complete models . . . make and fly both . . . for only \$1.50.



### AMERICAN BOY \$1.00

SPAN: 18" For .020 to .074 Eng. Our U-Control trainer . . . the biggest dollars worth of model airplane in the world. 100% complete.



### DREAM BOAT \$1.95

1/2 A" Eng., CO<sub>2</sub>, or Elec. Motors. Our exclusive aeronautical fin and rudder design. Prefabbed model has 12" carved balsa hull, etc., etc.



### LITTLE ACE \$1.95

SPAN: 18" For .049 to .099 Eng. For team racing or sport flying. Kit is 100% complete with formed fuselage & wing, metal cowl, etc.



### LITTLE BUCKEYE \$1.95

1/2 A" Eng., Jetex, Elec. Motors. New, low cost speedboat thriller. Completely prefabbed, 12" carved balsa hull, brass metal fittings, etc.



### BUCKEYE JR. \$3.50

LENGTH: 14" For .020 to .074 Eng. A "beaut" of a speedboat. Prefabbed model is 100% complete—carved balsa hull, brass fittings.



### Buckeye Jr. Cabin \$3.95

For 1/2 A" Eng., Electric Motors. Here's our sleek cabin cruiser. Has a removable balsa cabin; 14" carved balsa hull - 100% complete.



### RIVIERA \$3.50

For 1/2 A" Eng., Electric Motors. Authentic Chris-Craft replica with a 12" carved balsa hull and brass metal fittings. All parts finished.



### SEA HAWK \$2.50

1/2 A" Eng., CO<sub>2</sub> or Elec. Motors. Prefabbed. Has a 12" carved balsa hull, brass metal fittings, etc. Aeronautical fin and rudder design.

See the complete line of Scientific models at your favorite Hobby Shop.

# SCIENTIFIC

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# BRAND NEW

## CLASS "A" STUNT or COMBAT TRAINER

ONLY \$ **1** .95

**SCIENTIFIC**

U-CONTROL



# "SECRET WEAPON"

FOR CLASS "A"  
ENGINES  
.09 TO .19

**GREAT B-I-G 24"  
WINGSPAN**

15" LENGTH • 4" AIRFOILED WING

Introducing our brand-new "SECRET WEAPON" . . . an exciting profile model for all your experimental work. Honestly, you'll love this inexpensive trainer for testing new flying techniques, combat or stunt flying, etc. It's exceptionally rugged, extra-strong to really "take it." The completely prefabricated model (100% complete) assembles in a jiffy. See it at your dealers . . . soon!

3 MORE BRAND NEW SCIENTIFIC SMASH HITS



U-CONTROL  
**KELLETT AUTOGIRO**  
18" WINGSPAN FOR .020 TO .074 ENGINES  
Authentic scale replica of this famous forerunner of modern day helicopters. You fly it just like any other control-liner . . . and get the big extra thrill of real whirling rotor blades. It's easy to assemble & fly. Prefabbed model has a formed metal cowl, airfoiled wing, carved fuselage, struts, rotor blades, etc.

**\$1.95**



**"TORPEDO"  
OUTBOARD SPEEDBOAT**  
20" LENGTH 8" BEAM

Outboard engine fans . . . this is your speed. Power it with any of the popular outboard engines (gas or electric) and you've got a sleek 20 inches of "greased lightning" in the water. The model is super-prefabricated for quick, easy assembly. It features a genuine mahogany veneer hull, just like full size speedboats.

**\$2.50**



**SUPER half-pint RACER**

LENGTH 9" For Small Bore Gas Engines  
Here's our extremely popular race car. It actually speeds up to 40 m.p.h. — races on any smooth surface. The model features a direct wheel drive (no complicated gear mechanisms). The all-prefabbed kit (100% complete) includes: 2-tone painted body, 4 racing-type rubber wheels, brass bushings, brass fly-wheel, etc., etc.

**\$2.95**

SEE THESE SCIENTIFIC MODELS AT YOUR FAVORITE HOBBY SHOP

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SAY—

**SCIENTIFIC**

If no dealer is available, add 10c (postage & packing) to cost of model  
SCIENTIFIC MODEL AIRPLANE CO., 113 A2 MONROE ST., NEWARK 5, N. J.



Model boat enthusiasts should welcome this new type of racing craft  
Newcomers and oldtimers alike will find it easy to construct, fun to operate

# Look, Ma, No Boom!

## Swedish Butterfly Boat

By  
TED  
ALEXANDER

■ The Butterfly Boat is a model of a Swedish design sailboat that is showing a growing popularity throughout the Eastern seaboard. The plastic windshield for the cockpit is another Scandinavian contribution to the sport of sailing.

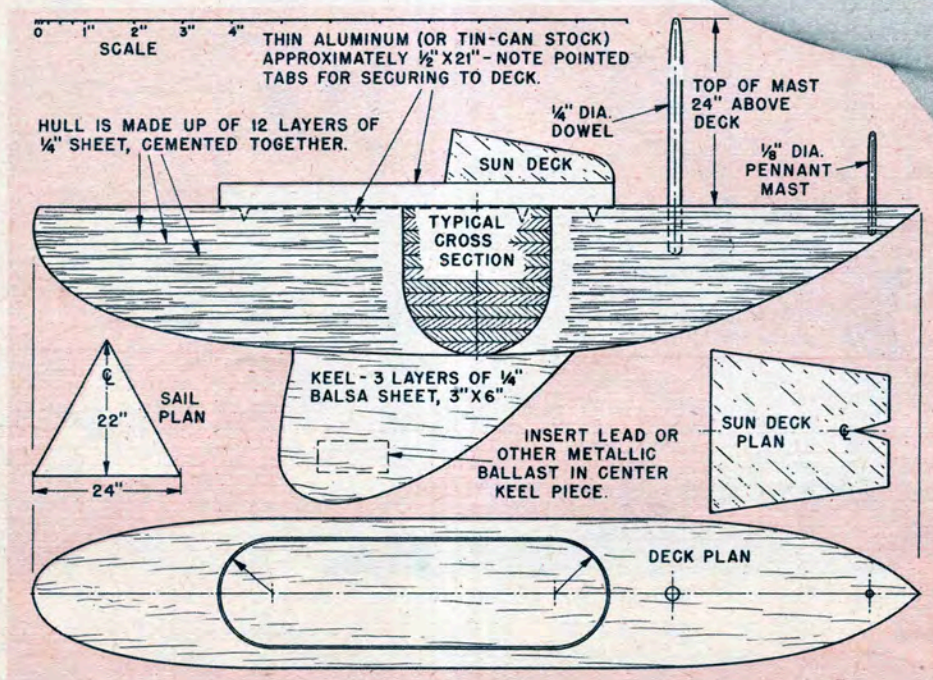
The model is 18" long, 3" wide, with a mast 24" tall. It is the type of boat that is fun to model because it is new, unusual, and easy to build. In the water it can outsail any standard model because the slightest movement of air is used by the butterfly sails to full advantage.

The first step is the hull. This is made up of twelve sheets of  $\frac{1}{4}$ " balsa 18" long, 3" wide, cemented together with model airplane cement. Coat each sheet on both sides with a thin application of cement. Allow to dry. Coat again on facing sheets and join together, holding securely for about two hours in a bench vise. Protect the block by facing with metal or hardwood so that it will not be dented by vise jaws.

Center line the top of the block and outline the deck shape as shown in the drawing. Draw out the side view of the hull from the drawing onto the block. Using a coping saw, cut out to both of these outlines. This will rough-out the hull simply and quickly. With a sanding block, using very coarse paper, sand down the hull to the usual curved shape of a boat.

Now build the keel out of three sheets of  $\frac{1}{4}$ " balsa, 6"x3" size. Before cementing these sheets (Continued on page 73)

Full-size plans for Butterfly Boat are part of Group Plan #255 from Hobby Helpers, 770 Hunts Point Ave., New York City 59 (50¢).



This new craft is perhaps one of the swiftest in years and gets its name from the "butterfly" appearance of the double sails attached to one mast that spread out like great white wings when opened to a tail wind. When sailing to a tack, the two sails join together to become one and the boat looks like a standard sailing craft.



## Bookshelf

(Continued from page 10)

pleasure or as a source of profit.

From the dawn of history man has recorded birds as his earliest pets and allies. There is the Arab legend of Noah sending a dove (dove and pigeon are words used interchangeably in olden times) from the Ark to see if the flood waters had receded. When the bird returned it had red clay on its feet; this made Noah so happy he prayed that doves ever after would have red feet. To the Arab today this is a logical explanation why an adult pigeon, no matter the color of its feathers, always has red feet.

The author has described the selection, raising and training of many breeds of pigeons with many a pleasant anecdote of the faithful services these birds have provided in both ancient and modern times.

So no matter if the pigeon fancier raises birds for pets or for racers, here is a book that will give many a new idea for the proper care and selection of breed.

**Baseball Rookies Who Made Good** by M. G. Bonner (Alfred A. Knopf Inc., 501 Madison Ave., New York, N. Y., 173 pages—\$2.50) is a vivid account of the rise of many of our present-day ball players.

The reader goes along with the rookie from his humble beginning through the many trials and tribulations and on to greatness. Since baseball is our national pastime most readers are familiar with the players selected. However, the author has removed these star performers from the status of muscular robots and has given each a warm human personality.

This is a book that any baseball fan will want in his library. After reading it you feel that you have been close enough to each rookie to shake his hand and become his close, personal friend.

**Skyrocketing into the Unknown** by Charles Coombs (William Morrow and Company, 425 Fourth Ave., New York 16, N. Y., 256 pages—\$4.00) is the record of rocket and jet plane development in the United States.

The author takes the reader along with pilot in the experimental flights of both jet and rocket propelled craft, leaving us breathless and sometimes just a little shaken. A good part of the text explains the problems and the equipment devised to meet the requirements of the ultrasonic speeds that have been developed.

One of the outstanding features of this book is the photographic illustrations of models of newer and better rocket and jet ships. This volume is ideally suited for the library as a reference book and should be requested by any enthusiast interested in the problems associated with the development of experimental aircraft.

## Rocket Trails

(Continued from page 12)

ance and control, data reduction techniques, operation of electronic computers and flight simulators, and many of the other myriad sciences which make up the ever-expanding rocket and guided missile field.

This program has been very successful in turning out qualified engineers and scientists. And who knows? The Co-op Student Plan may eventually turn out the spacemen of tomorrow!

(Continued on page 65)

# NOW - VERTICAL TAKE-OFF

(just like Navy's "Pogo Stick" and latest guided missiles)  
as well as steep-angle climb and level flight with this  
spectacular New, Different Engine for Model Planes

## TURB-O-PROP GAS TURBINE PROPELLER

**NOTHING LIKE IT!** Powerful but light, Turb-O-Prop will give you new thrills with any model plane — free flight, stunting, racing, even helicopters and novelty craft. If not at your dealer's, send \$3.98 (check or money order) for prompt post-paid delivery. Easy instructions.

1. Jet-Tex fuel capsules are loaded into air-tight chamber.

2. Jet fuse extending into combustion chamber is lighted here and ignites fuel.

- Comparable to "1/2-A" conventional engines.
- Burns standard Jet-Tex fuel.
- Absolutely no torque — but super-powered jetlike thrust!
- No prop cranking to start — just fuel up and fire the fuse!
- 1 oz. with fuel and engine mounts.
- Makes smooth, humming engine sound in flight
- Guaranteed performance.

3. Gas from burning fuel is forced out jet-like prop tubes.

4. Prop revolves at extremely high speed with jet thrust of tubes.

**\$3<sup>98</sup>**

The first practical replacement for rubber band power!

**THE DEMPSTER COMPANY**

107 Clinton Place, Kansas City, Missouri

AMAZING NEW MODELING MATERIAL!

**HOBBYCRAFT**

**fiberglass**

LINE

Complete Experimental Kit  
Fine Weave Cloth (1 yd.)  
Medium Weave Cloth (1/2 yd.)  
Coarse Weave Cloth (1 yd.)  
P.V.A. Parting Film (2 yd.)  
Liquid Mold Release (4 oz.)  
8 oz. Glass Resin  
16 oz. Glass Resin  
1/4 oz. Glass Hardener

\$4.95  
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If not available at your dealers, order direct.

**MIDWEST PRODUCTS CO.**

6005 East Dunes Highway

Gary, Ind.



# New Authentic Scale Models

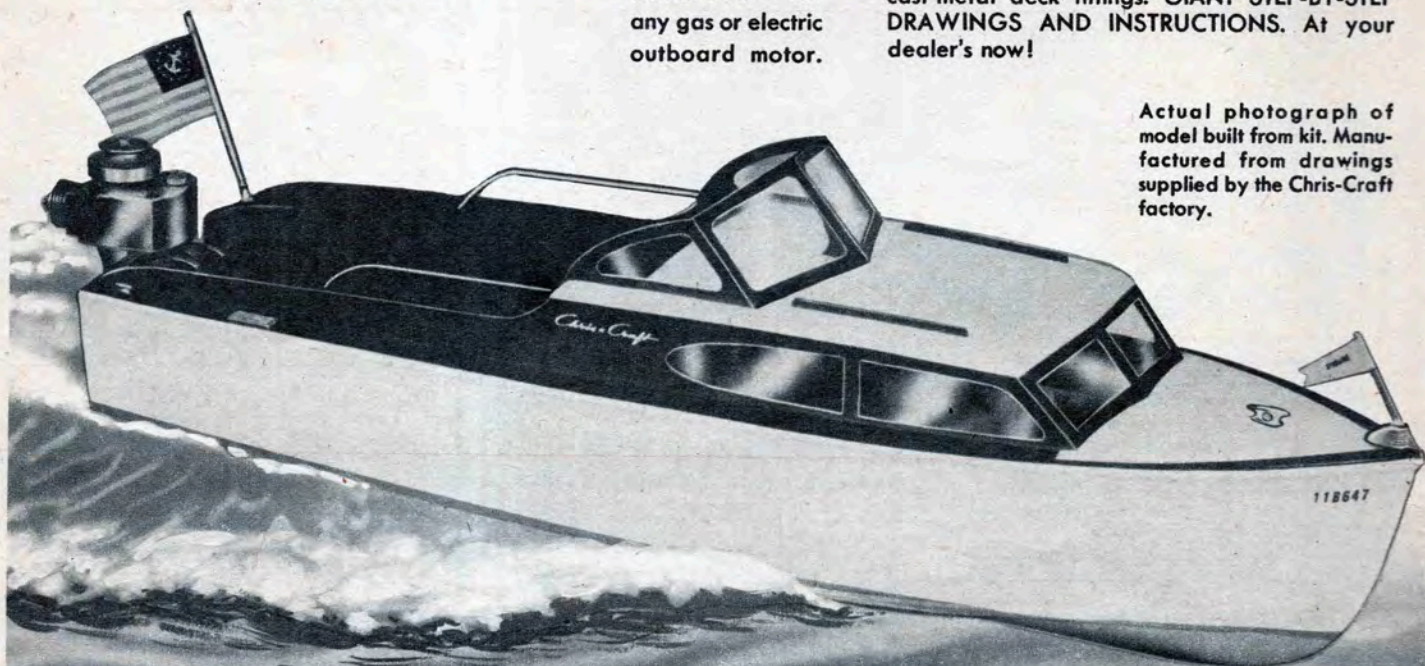
## CHRIS-CRAFT 21' MONTEREY

World's First Outboard  
Powered Boat Kit Designed  
for Radio Control!

### \$5.95

including all cast-metal fittings! Kit B-13M. Length 21" Beam 7 1/8". For any gas or electric outboard motor.

It's the world's first—and naturally it's by Sterling! Never before a scale model outboard kit designed expressly for radio control! Entire cabin is removable. Kit includes die-cut mahogany cabin sides, windshield, aft bulkhead, flying bridge windshield, toe rail, catwalks, and other die-cut balsa and mahogany parts. Also plastic for windows, authentic decals, wire, and all cast-metal deck fittings. GIANT STEP-BY-STEP DRAWINGS AND INSTRUCTIONS. At your dealer's now!



Actual photograph of model built from kit. Manufactured from drawings supplied by the Chris-Craft factory.

# DESIGNED FOR

### SEE THESE OTHER STERLING MODELS

#### PLANES

|                       | Kit  | Price  |
|-----------------------|------|--------|
| Monocoupe             | C-1  | \$4.95 |
| Howard Pete           | C-2  | 5.95   |
| Mr. Mulligan          | C-3  | 4.95   |
| Waco                  | C-4  | 5.95   |
| Polish Fighter        | C-5  | 5.95   |
| SE 5                  | C-6  | 5.95   |
| Ryan S-T              | C-7  | 5.95   |
| Fokker D-VII          | C-8  | 5.95   |
| Corsair F4U-1         | C-9  | 5.95   |
| Ring Master           | S-1  | 2.95   |
| F-51 Mustang          | S-2  | 2.95   |
| Yak-9                 | S-3  | 2.95   |
| Space Master, Jr.     | S-4  | 2.25   |
| Ring Master, Jr.      | S-5  | 1.95   |
| R. C. Piper Tri-Pacer | FS-1 | 10.95  |

#### POWER BOATS

|   | Kit  | Price  |
|---|------|--------|
| Richardson 27' Cruiser                              | B-1  | \$5.95 |
| Higgins 17' Speedster                               | B-2  | 4.95   |
| Chris-Craft 47' Buccaneer                           | B-3  | 7.95   |
| Century Resorter '20'                               | B-4  | 3.25   |
| Century Sea Maid '20'                               | B-5  | 2.95   |
| Chris-Craft 32' Cruiser                             | B-6M | 9.95   |
| Deluxe 34-pc. scale marine fitting set for Kit B-6M | B-6F | 3.50   |
| Chris-Craft 50' Catalina                            | B-7M | 11.95  |
| Deluxe 66-pc. scale marine fitting set for Kit B-7M | B-7F | 4.95   |
| Century Sea Maid '20'                               | B-8M | 7.95   |
| Deluxe 35-pc. scale marine fitting set for Kit B-8M | B-8F | 3.95   |
| Higgins 26' Express Cruiser                         | B-9  | 3.95   |

|   |       |       |
|---|-------|-------|
| Harco '40' Deluxe Cabin Cruiser                       | B-10M | 10.95 |
| Deluxe 64-pc. scale marine fitting set for Kit B-10M  | B-10F | 4.50  |
| Chris-Craft 63' Motor Yacht                           | B-11M | 18.95 |
| Deluxe 108-pc. scale marine fitting set for Kit B-11M | B-11F | 7.50  |
| Sea Dart  | B-12  | 3.95  |

#### MARINE DRIVES

|   | Price  |
|---|--------|
| 1/2A (1/2" dia.) Gas Marine Drive                             | \$2.95 |
| A (3/16" dia.) Gas Marine Drive                               | 3.95   |
| BC (1/4" dia.) Gas Marine Drive                               | 3.95   |
| Electric Marine Drive   | 2.25   |
| Marine Fittings Also Available Individually. Ask Your Dealer. |        |



# .....Completely Prefabbed!



Actual photograph of model built from kit. Manufactured from plans supplied by the Cessna Aircraft Corp.

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Kit FS-2  
Length 30"  
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For Class 1/2A and A engines.

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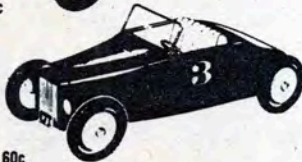


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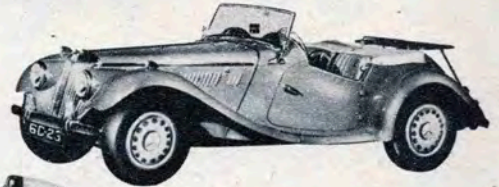
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## Model Car News®

Berkeley's British "MG" is the new TF series, scaled  $\frac{1}{2}$ " to the foot. Carved balsa body, cast metal bumpers, grill, lights.



Scientific's Super Half Pint racer has 9 inch overall length, takes small bore engines for direct drive. With flywheel.

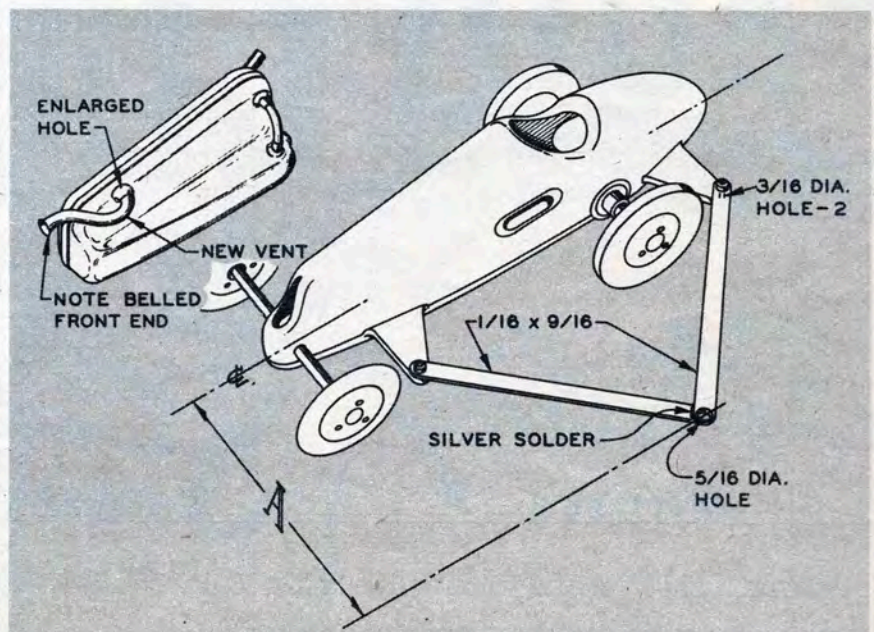
■ That little racer pictured above is Scientific's "Super Half Pint," a simple but hot speedster that would be an ideal way for the neophyte to break into the model auto racing game. The Pint is intended for Half-A engines, the drive coming from the horizontally mounted powerplant which turns the left rear wheel directly, thus requiring no gearing complications. The car comes in prefabricated form and has a rugged molded wood body which is factory-painted as you see it in the pic. The wheels are of molded rubber, all but the drive wheel being held in place by lock-type push nuts. The kit includes a precision turned brass flywheel, and of course all the metal parts needed to build the car, aside from the engine. The finished car is 9" long, and has been found capable of about 40 mph on most any smooth surface. A neat little job.

**Safety and speed hints** shown in the drawings came from Bob Moore (66 W. Elizabeth Ave., Bethlehem, Pa.). Here's a trick that Bob recommends for use with the popular Dooling Arrow cars. It's a scheme to insure better fuel feed, and

consists of adding a better vent to the tank, which will afford a little positive pressure feed at high speed. As Bob says, the average home constructor just couldn't possibly duplicate the unusual tank shape used in this car but the tank can be made very satisfactory by simply removing the original vent and replacing it with a piece of  $\frac{1}{8}$ " copper tubing that has been belled-out at the front. Such tubing can be had at most plumbing or auto supply houses.

Cut off a  $2\frac{1}{2}$ " length and fill it with solder to prevent kinking when you make the bends. Open up the tank hole (if you do this with a drill, be sure to clean out the tank *thoroughly* before use—a better way is to open up the hole by forcing in a tapered piece of metal like a nail set or center punch) and solder the new vent in place. Standard Arrows modified this way have turned in 145 plus.

Another of Bob's tricks is of interest mainly in the safety category, but will also give a 2 or 3 mph increase in speed. It's a bridle made of stainless steel strips, fastened to the car with two bolts. At the overlap point, the joint is silver-soldered, even (Continued on page 67)





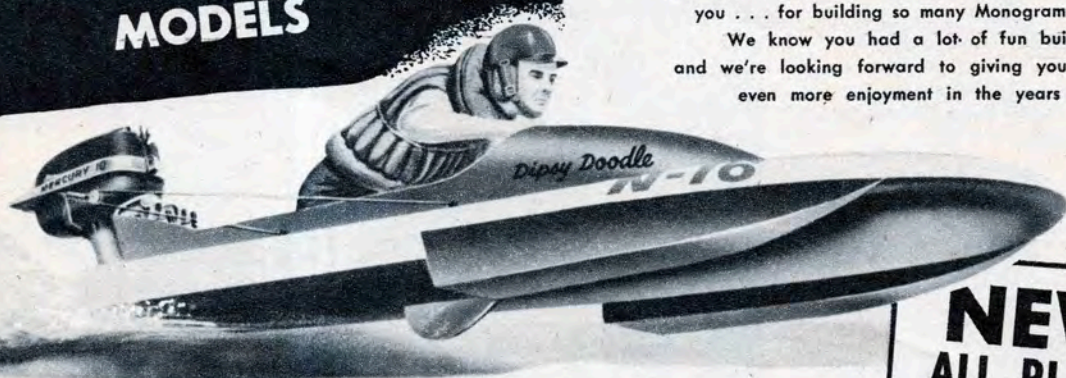
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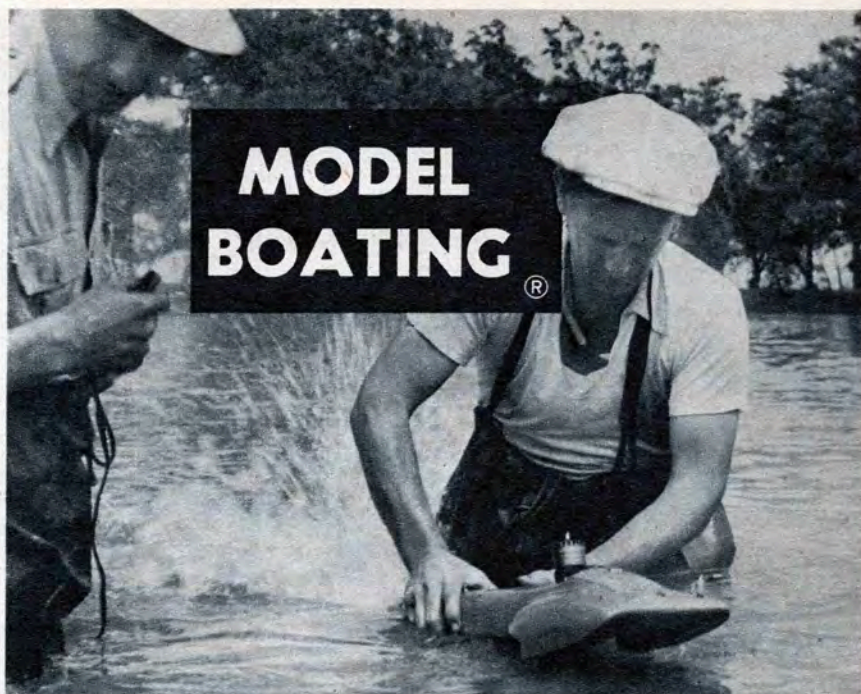


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## MODEL BOATING®



### We cover 'em all: steam, gas, glow plug, "diesel," sail power (\$10 for pix!)

■ We have been getting quite a few neat boating tricks, sent in by readers who have noted our pleas for same. You'll be seeing some of these in each issue. This month we have one from Joe Archer (3314 Center St., Orlando, Fla.) who says, instead of launching your craft and trusting to luck where it will go after it leaves your hands, why not install an automatic rudder control that will turn the ship in a desired direction after a measured time interval?

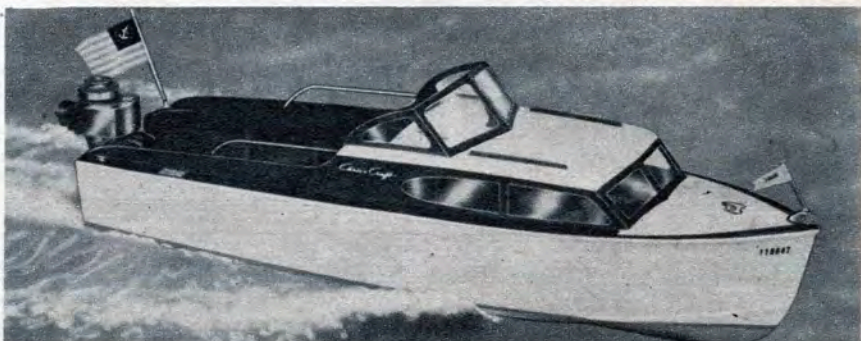
The rudder can be moved by a rubber band, controlled by one of the systems used by plane modelers for dethermalizing. Most hobby shops carry dethermalizer fuse, or you can fit one of the air-cylinder timers used to cut engine runs.

**Powered Racing Classes** are a mystery to many of our readers who have asked us to print a list of the classes which are in use today. Among those who have asked for this data are Glenn Minnick (2829 S. 50th St., Milwaukee 15, Wis.) and Joseph Staschke (1892 Melrose St., Chicago 13, Ill.). Well, the setup goes like this: you'll note that we have the racers classed from A to E.

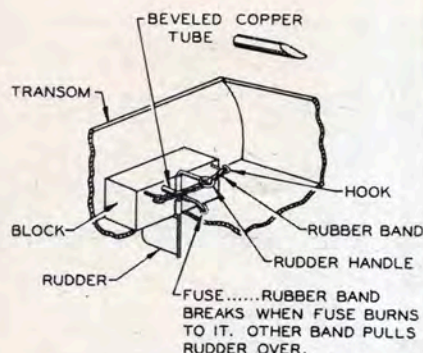
These classes call for engines and total weights as follows: **A**—internal combustion engine with cylinder capacity of more than 30 cc. (1.83 cu. in.) and weight not greater than 16 lb. Steam powered boats shall weigh more than 14 lb. **B**—I.C. engine more than 15 c.c. (.915 cu. in.). Steam, more than 9 but not greater than 14 lb. **C**—I.C. engine more than 10 c.c. (.61 cu. in.) but not more than 15 c.c. Steam powered, weight more than 7 lb. but not more than 9 lb. **D**—I.C. engine shall not exceed 10 cc. Steam powered, no more than 7 lb. **E**—I.C. engines only, no more than 10 c.c., engine must be *strictly stock*, except for addition of flywheel, if required. No hop-up parts allowed, even if sold by engine manufacturer. If glow ignition used, ignition points of spark ignition engine may be removed. **F**—any make or type of I.C. engine not greater than 5 c.c. (.305 cu. in.) capacity. There are no restrictions on the size of steam powerplants, except the weights noted, which are less fuel and water. Classes may be added for smaller engines, and for jets, at a later date. There are strict I.M.P. B.A. rules for line length, number of laps, time to get boat under way, etc.

**Air or Water Cooled**—that's the question. Having been asked which was best in the small classes of engines, and having no certain answer ourselves, it seemed smart to put it up to someone who

Chris-Craft 21-foot Monterey outboard express cruiser available as 21-in. prefabbed kit by Sterling Models for glow plug or D.C. motors; plans show R/C installation. \$5.95.







handles both, in the same sizes. So we approached Bill Atwood, of Atwood Motors; Bill's concern makes the same size motors in air and water-cooled version, and for both inboard and outboard use.

Bill says they have found that as long as the cylinder head is exposed to a flow of air, and the boat moves at more than 10 mph, there is little difference between the two. Of course, when you put the motor down inside a cabin cruiser, then the water-cooled version is the thing to use. Similarly, if you attach an outboard to a large slow-moving craft, here again the water-cooled engine would be preferred. If your cabin craft moves at a good rate of speed, and you can leave off the windshield so that there is a good draft of air on the engine, the air-cooled style would be entirely satisfactory.

**Clubs and People.** Our good West Coast correspondent, Bill Baughman, said that he has received quite a bit of correspondence as a result of our putting his name in this column. A good many of those writing him are "lone wolves" in their vicinity, who ask Bill for names of local boating modelers with whom they can get in touch.

Here are some of the most active ones (others have been mentioned in this column in past issues): H. J. Barker (10167 S. Memphis, Whittier, Calif.); A. Balling (910 Cooklowe Ave., Baltimore, Md.); G. Sienkiewicz (5153 S. Lafin, Chicago, Ill.); W. Pardee (18524 Greeley, Detroit); B. Kaufman (6811 Horrocks, Philadelphia); R. Johnson (228 The Kingsway, Toronto, Canada); R. Ruggeri (5528A Easton, St. Louis 12, Mo.). Bill has been in touch with M/S Paul E. Myers (306 A & E Maint. Sq., MacDill AFB, Tampa, Fla.) who is head of the Tampa Bay Model Boat Club; this group is interested in both power and sail boat models, and welcomes newcomers.

October Meeting of the Southern Calif. MPB & Y Assoc. was the best in some time, and activities seem to be increasing after an all-time low. An information bulletin on the club has been made up and copies will be given to all hobby shops for distribution. The group is still trying (Continued on page 72)

Fleet Line "Sea Comber" is \$10.95 15" cabin cruiser complete with electric motor ready to run. Mahogany stained deck; 5 1/2" beam.



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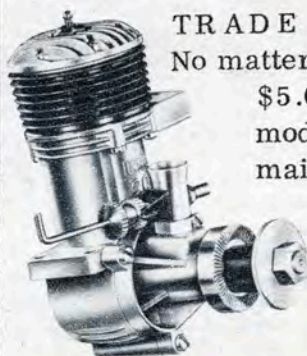
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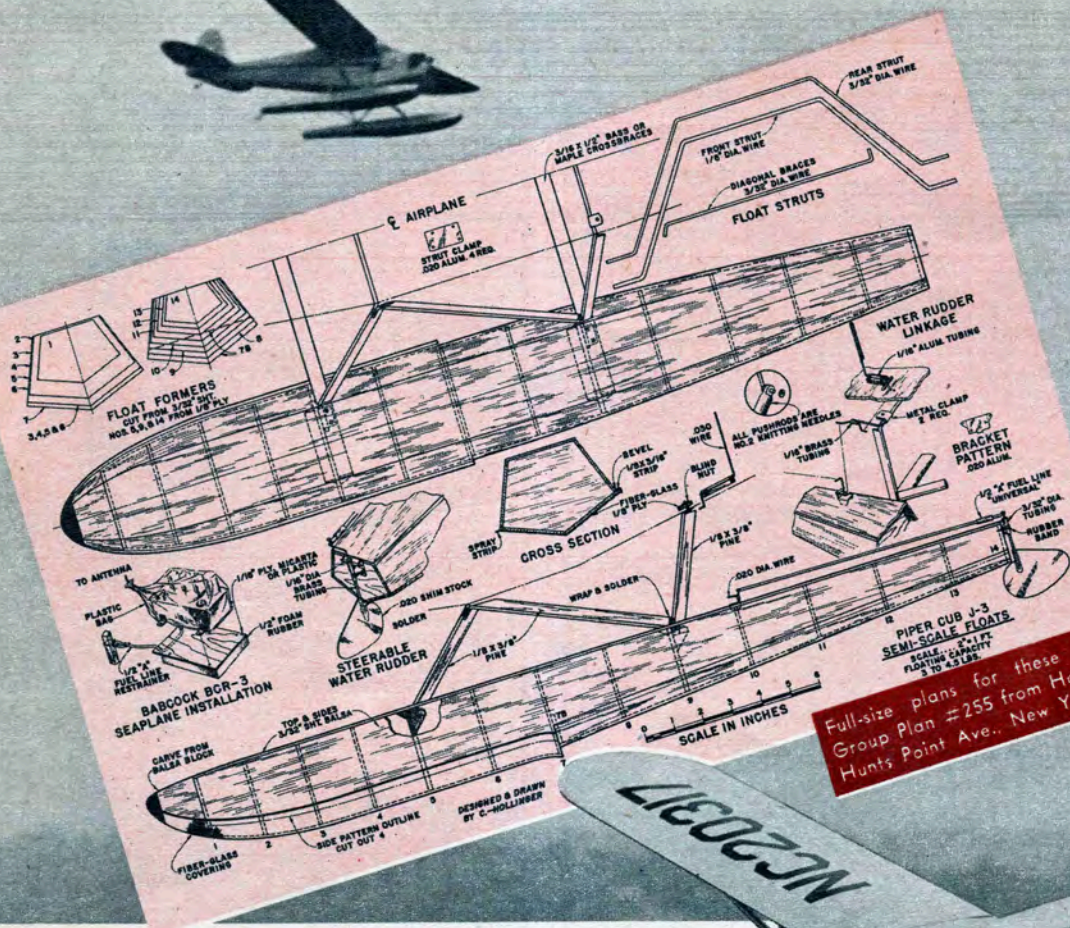
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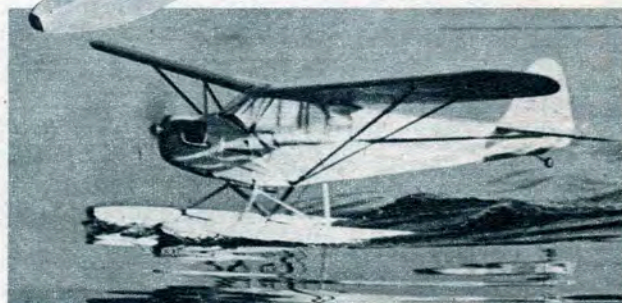
# Semi-Scale Floats FOR R/C MODELS

By CHUCK HOLLINGER

■ What say we go for a short hop in the Cub before discussing seaplanes? Here, you take the transmitter and I'll have the motor going in a jiffy. There she starts! Give three beeps and it will drop to idling speed. Now I'll set the Cub in the water and you taxi her out to that clear spot—see how nicely she controls with that water rudder operating? Check the wind. All clear? Okay, give three beeps and there she goes! Look at the wake . . . there, now, it's much smoother because it's on the step . . . another fifty feet and she's off! How about a 180 deg. turn now and cut the motor back to low speed for a power-on landing. Here she comes taxiing up to the beach—now three more beeps, hold, and there the motor has stopped.

This is only a sample of the fun that is in store for you with an R/C seaplane. Looked easy, didn't it? Well, a lot of work and a good many dunkings preceded this flight.

Here, for instance, is a short, sweet history of some of the things tried. First off, two stationary rudders were mounted for scale appearance. Result—no control over direction on the water as the air rudder wasn't effective enough. No take-offs. Next we tried to make one water rudder steerable using pulleys and Nylon thread. This didn't work because the Nylon had too much stretch, so a pushrod (Continued on page 66)



For plans of Chuck's J-3 Cub see the previous issue. Floats can also be used for free flight; can be scaled 40% of any wingspan.





(Continued from page 57)

**"Cut It Down!"** Rockets and guided missiles are not quite as reliable as automobiles yet, perhaps because we've built more automobiles. As a result, missiles don't always perform according to plan . . . at least not while they're still "in the development stage." Anything can go wrong, and sometimes does. But failures can be as important as successful flights; they tell rocket men that a particular device or technique will not work.

Back in 1946, an errant V-2 rocket (the V-2's were infamous for their tricks in the sky) highlighted a fiesta in Juarez, Mexico, by wandering off the White Sands range during the last few seconds before motor cut-off. Since that time, a fantastic array of flight safety devices have been put into use at White Sands. Each missile carries a radio receiver which can pick up commands from a ground transmitter to cut off the fuel to the motor, break the missile into pieces, or demolish it altogether.

One man and one man alone stands with his hand on a switch when a missile goes up. It's a job that calls for cool, quick thinking during the comparatively short time in which a rocket engine burns. By watching the reports of the radar tracking devices which cause little pens to skitter across plotting boards, this man must determine whether or not a missile is safe.

The command, "Cut it down!" has been used many times; just how often is classified information. Very few people realize that the flight safety men are there at all, but they are as indispensable to missile flight tests as the launching crew themselves. Their work begins when the launching crew's task is done, and human lives rest in their hands. They have never failed, not even when the fabled Viking rocket Number 8 broke loose during a static firing on the launcher; in less than thirty seconds, they had their transmitters on and had triggered the detonators in the missile, their signals being picked up by the dead-ended antenna leads in the rocket.

They are in part responsible for the wonderful safety record of White Sands Proving Ground: not a single man killed in rocket research and development in the entire life of the Proving Ground, more than nine years.

In a way rocketry so far can be called "The World's Safest Business."

## Mini-Missile

(Continued from page 49)

again just inside the plastic canopy so the point is embedded in the side. Cement in place when cool. Same procedure is repeated for back right, then other side. Caution! Keep heat away from plastic when you are heating pin!

The maiden flight of this model was an R.O.G. take-off in a 20 mph wind. However, if the flyer does not want to risk a ground take-off for a while, he may hand launch the model. The model is gripped just forward of the leading edge of the wing. Using this method of launching, the usual crack-up of low wing jobs at take-off by a bad launch is almost impossible. Trimming of the ship is done by placing shims between the wing and fuselage. However, not much should be necessary. Thrust adjustments will vary with the engine used. The ones shown work out well with the Cub .075 Diesel.

The model is covered with red silk. The body has 6 coats of clear dope and the wing has 4. The model shown was trimmed with white dope on the leading edges. The pinstripe was added last.



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## HOBBY ITEMS IN THE NEWS

▶▶▶▶ The story of Ohlsson & Rice and the Cheminol Corp. (9307 E. Bermudez St., Rivera, Calif.) was dramatically presented on the West Coast television program, "Success Story," sponsored by the Richfield Oil Co. "Success Story," which Richfield sponsors as a public service program, is dedicated to the American way of doing business. Each program tells the story of a leading company in its field.

▶▶▶▶ Ever since radio-control model airplanes first appeared, hobbyists on both sides of the English Channel have been thinking about duplicating in miniature Louis Bleriot's epic hop across that 22-mile strip of water 45 years ago. We hear from Polk's Model Craft Hobbies, Inc. (314 5th Ave., NYC 1), distributors in U.S.A. of the E-D Aristol radio control equipment and "diesel" engines, that modelers Sid Allen and George Redlich remotely guided a 6 ft. R/C plane from Dover, England, to Calais, France, in 40 minutes (3 minutes over Bleriot's 1909 time). Receiver was an E.D. Mk IV3-reed type, engine was an E.D. .213 cu. in. Hunter Diesel. Controlled from a lightplane, the model weighed 7 1/2 pounds at launching; 3 pints (1 1/2 lbs.) of fuel were carried.

▶▶▶▶ E and H Model Hobbies (130 W. Chelton Ave., Philadelphia 44) announces a new 1955 catalog of model planes, railroads, boats, crafts, vehicles and toys that has 140 pages, lists thousands of items and illustrates hundreds of products. 50¢ price is refundable within 60 days on purchase of \$5 or more. Catalog also contains data on tools, stamps and photography and has many pages of charts and specification listings.

▶▶▶▶ Darwin Model Aircraft (2430 Tremmel Ave., Ann Arbor, Mich.) is expanding with a new factory building at 2930 S. State Rd., Pittsfield township. This firm, owned by R. F. Darwin, manufactures gas tanks and U-Control handles for model aircraft.

▶▶▶▶ Revell, Inc. (Venice, Calif.) announces through its president Lewis H. Glaser, that it has acquired the Miniature Masterpieces line. This includes plastic coaches, horses, etc.

## Semi-Scale Floats

(Continued from page 64)

system was devised using aluminum tubing. This functioned perfectly on the bench, but with the motor running it created so much static that the receiver was unreliable.

The solution to that was to substitute plastic knitting needles as pushrods. Now the steering both at low speed and high was licked, but try as we might she still liked the water too well and wouldn't get off. In the process, however, we soon learned that water can really chew up the tips of a prop so now we fiberglass them, resulting in a practically indestructible propeller and one that has more fly wheel action, which means increased reliability on low speed.

A hook (slight droop) was added to the step of the floats. This resulted in quite an improvement, but still no take-offs. The only thing to do then was to move the steps forward one inch from their present location. But in the rush we didn't bother to build up the hooks as we were sure it would make it now! Well, it didn't. Another thing learned, however, was that water was getting into the cabin, so as a protection for the receiver we enclosed it in a small plastic bag and applied rubber cement around the plug to make the radio unit absolutely waterproof.

While it didn't quite take off on those last tries we noticed that it apparently had enough flying speed but there was just too much suction. Back to the shop and the "hooks" were added again. This

time she made it after a run of about 150 feet! Since then we have experimented with the angle of floats relative to the fuselage, and with about a 2 deg. angle she now consistently takes off in about 100 feet. This could be shortened even further if we wished to sacrifice its landing characteristics by putting them at 0 deg. angle. This would be okay for an R/C job with elevator control to level her off on the approach. One inch has been added to the aft end of the floats for increased buoyancy.

Now for the construction. Let's start by cutting out of 3/32" sheet the formers for both floats and mark their centers with a light pencil. Formers number 5, 9, and 14 are to be cut from 1/8" ply. Cut out tops of floats from 3/32" sheet and mark a light line down the center. Cement formers in their respective places. Cut out sides to the outline shape as shown on the drawing, bevel the top edges and cement them in place. It is recommended that Weldwood glue be used for attaching the sides and bottom. Cover the bottom of the floats from former No. 3 forward, with the grain of the sheet running crosswise. Cut nose blocks to shape and cement to the No. 1 former. Carve and sand to final shape.

The two cross struts that connect the floats together should be made from maple or basswood (not pine). Cut slots in sides of floats and slip through these struts, cementing with Weldwood glue. Note: allow 5/32" clearance for metal brackets which are to be added later. Add triangular hard balsa or pine reinforcements. Cover the remaining bottoms with 3/32" sheet balsa, running the grain lengthwise of the floats. Cover the top, sides, and bottom with Silkspar. It isn't necessary to cover the bottom from the step forward.

Cement soft balsa strips 1/8" x 3/16" along the sides from step forward to act as form for the fiberglass spray strip. Now fiberglass the bottoms of both floats from the step forward to the nose. Bend the wire float struts to exact size as this determines their angle relative to the fuselage. Cut out metal brackets and bend them around the wire. Cut small holes in tops of floats, screw on brackets, and slip wire in place. Replace cutouts. Bend diagonal braces to shape, wrap and solder to struts. Cut and sand the strut fairings to shape and cement to wire. Give the floats two coats of clear and four of aluminum fuel-proof dope, sanding lightly between coats.

Drawings show how to construct the mechanism for operating the water rudder. This linkage set-up is designed to operate from a Bonner compound escapement, so if you are using a different escapement it may be necessary to revise slightly. Mount the floats to the fuselage using rubber bands to connect the front struts and two 4-40 machine screws to attach the rear ones. Be sure to ground your radio circuit to one of the blind nuts that anchor the rear struts. Check the unit for smoothness of operation and then again with the motor running.

Incidentally, you will need a block of wood approximately an inch thick to which mount two sponge-rubber pads spaced the width of the floats apart. This serves as a stand which sets under the aft end of the floats to protect the water rudder while you are running the motor on the ground.

Now you are ready for the taxi tests. With the motor running at low speed set the model in the water and check to see if it taxis in a straight line with the rudder neutral. If not bring it back and adjust the rudder. A 10 deg. deflection left and right of center seems to be a reasonable compromise for the Cub as



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any more than this makes it too tricky at high speed, and any less means inadequate control at low speed.

We recommend that you use a propeller of nine-inch diameter and four-inch pitch under rough water conditions, and a 10/4 prop for smooth water.

The floats as drawn are easily adaptable to any R/C designs with wingspans of 4½ to 7 ft. and flying weight between 3 and 4½ lbs. They could support even more, say 5 lbs. total weight if your model had elevator control, which means that the floats could be shifted aft one inch. This change will require that the model be "flown" off the water by rocking onto the step and then a touch of up elevator as per full scale.

If the floats are to be used for a model above or below these limitations or if you wish a more "custom" fit, scale them to 40% of the wingspan of your particular ship. Regardless, it will first be necessary to locate the C.G. of your model (with land gear attached). Mark this point onto a side-view drawing and draw a vertical line through the C.G. relative to the center line of the fuselage. Now with the aid of a protractor lay out another line at an angle of 10 deg. down and forward from the vertical. The step of the floats should intersect this line. On the average model the result is generally one and one-half inches forward of the C.G.

Incidentally, it may be necessary to add a sub-rudder to some R/C designs when converting to floats. The need for extra rudder area will make itself known by the model resisting turns into the wind and a general lack of directional stability.

As for the radio reactions around water, it isn't known how other units are

affected, but after numerous flights we have found the Babcock sets to be every bit as trouble-free as when flying on land.

While all the discussion has pertained to R/C, these floats could easily be used for free flight as well. Since their wing loading is generally much less, and coupled with a higher power loading, a F/F will take-off much more quickly. Locate the step in the same manner, however, and use two stationary water rudders.

## HOBBY CALENDAR

List your hobby club's public shows, exhibitions and contests here! There's no charge. Advise "A/H" not less than 30 days in advance. Give telephone of contact man if possible.

Address of contact man is in the same city as site of event unless otherwise specified.

PA—Bristol, Jan. 20. Aeromodelers air-model indoor meet for paper-covered stick and W/L glider. A. E. Abrams, Jr., 1031 Pond St.

NJ—Hoboken, Feb. 11-22. 25th annual public exhibition by New York Society of Model Engineers of all types of models with special emphasis on working model railroads. Cash awards in various classes including architectural, boats, cars, furniture, houses, planes, trains. Models must be entered by Feb. 5. NYSME, Inc., Lackawanna Terminal, Hoboken, N. J.

N.J.—Haddonfield, Feb. 13. Annual Polar Bear air-model meet sponsored by the Highway Glo Bugs at Walworth Field. Control line speed, stunt, combat and team racing. Paul Karl, Kings Highway & Haddon Ave.

ARIZ—Phoenix, Feb. 20. 4th annual Southwestern Regional modelplane meet sponsored by Phoenix MAC. Q. T. Webster, 521 E. Camelback Rd.

OHIO—Cleveland, Feb. 22. 8th annual National Model Plane Exhibit (non-flying) in Higbee Auditorium. Sponsored by the Chamber of Commerce and Air Foundation. Events for all ages; entries judged for fine workmanship. Charles Tracy, Aviation Editor, Cleveland Press.

CALIF—San Diego, Feb. 27. 2nd annual Convair Aeromodelers Half-A scale meet. Jim Saffig, 1560 Froude St.

N.Y.—Brooklyn, May 15. Mirror Model Flying Fair at Floyd Bennett Field. Ted Clodius, N.Y. Daily Mirror, 235 E. 45th St., NYC.

OHIO—Cleveland, May 15. Annual Armed Forces Day air show at Cleveland Hopkins Airport sponsored by American Steel & Wire Div., U. S. Steel Corp., City Recreation Division and The Press. Control line carrier, stunt and combat. Prizes include pilot training. Charles Tracy, c/o Cleveland Press.

## Model Car News

(Continued from page 60)

if this joint breaks, the car will still be held safely. Correct dimensions for any car may be found by suspending it from a temporary bridle of soft wire; remember that if your car is a ".60", the rules call for at least 9" from the car centerline to the cable attachment hole (dimension A on the drawing).

**Racing News.** The Bethlehem (Pa.) boys planned a big "end-of-season" race which was to be complete with all the trimmings. Well—they had the trimmings, complete even to flags, trophies, hot dogs and coffee. Only one thing missing—nice weather. Though invites had been sent to most of the car gang within 600 miles, the weather got brisker as race time approached, with the result that it was downright cold when Sunday rolled around—and none of the expected out-of-town gang showed up. So . . . the local boys had a fine Sunday get-together, and with only about 10 of them on hand, everyone had plenty of time on the track. The weather caused such starting trouble that there was talk of awarding a trophy to the man who spent the least time on the starter, or who ran the fewest number of laps pushing his car!

Bill Moore dumped a generous amount of amyl acetate in his regular fuel, and became "Easy Start Champ," with Feczko a close second. Loose ran for five laps till he was out of gas (the car—not Loose!). Howard Fox had a new car, a 1234 formerly owned by Glenn Fairabend, and thus had real incentive to get it rolling; after frantic help from a relay

(Continued on page 69)



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**CYCLE CHATTER**



**By OTTO EISELE**

**ASSOCIATE EDITOR  
"AMERICAN BICYCLIST"**

Photo by Al Hatos

## Do you have a younger brother 8 to 12? He'll be interested in hearing about Midget Race Class

■ Midget bicycle racing is a new hobby which has taken hold in the last few years. Events for youngsters with their sleek and shiny bikes are now included on every regular cycling program that is scheduled in the Eastern United States. In the photo above you see Jack Simes (left) about to win the New Jersey Midget championship crown at New Brunswick.

This so-called "Midget Class"—"mighty mites" of speed cyclists—was originated by Tino DeAngelis. About four years ago he ordered 25 custom-built racing bicycles of a size that would accommodate youngsters between the ages of 8 and 12. In order for the youngsters to race them properly, the bikes had to be of a smaller size than regular equipment used by older boys.

Mr. DeAngelis assigned the bicycles to various cycling clubs. Riders are permitted to retain the bicycles as long as they show interest in cycling and until they reach the age limit in the class, set at twelve years. A juvenile class exists for boys between the ages of 12 and 16. Some of the original bicycles are now being used by their fourth riders, previous riders having advanced to the juvenile class.

The increased interest and proficiency of those with a year or more of "Midget" racing experience has made it possible and advisable to subdivide the category into Class A and Class B. Thus, events are run off in Class A for boys between the ages of 10 and 12 with 24-inch wheel bikes and Class B for boys between the ages of 8 and 10 with 22-inch wheel machines.

Most of the midget cycling events are held in Central Park, Teaneck, N. J., adjacent to the Little League Baseball Park. The asphalt roadway used for the pedal-pushing is about six feet wide and about a third of a mile around, a perfect miniature track. Contests range from one-quarter mile to one-half mile and one mile events. Occasionally they pedal two miles, but the shorter distances are preferred.

Races for "midgets" are a regular

feature of such well-known racing programs as the annual Tour of Somerville, N. J., where the town's main thoroughfares are closed off each Memorial Day for four hours of bicycle racing; this event attracts riders from all parts of the United States and Canada. Other centers of bike racing which have seen the little leggers are Johnson Park, New Brunswick, N. J.; Brookdale Park, Bloomfield, N. J.; Flushing, N. Y. Oval—and of course lilliputian cycling headquarters at Central Park, Teaneck, N. J.

A number of the boys are following in the footsteps of their parents who are veteran amateur or professional cyclists. Outstanding is Jackie Simes III, of Westwood, N. J., who was until recently the unofficial champion of midget racing. Now, having reached his twelfth birthday, he is no longer eligible to compete in this particular age group. Jackie's father, Jackie Simes II, was national Amateur Champion in 1936 and his grandfather, who also acts as the youngster's trainer at times, was an outstanding pedal pusher at the turn of the century. Jackie's record for the half mile, set at Flushing Oval in October, 1953, is 1 minute 23 seconds; his one mile record is 2 minutes 36 seconds, set the same day on the same course. Karl Kamena of Teaneck, N. J., is credited with the fastest Class B half-mile, 1 minute, 35 seconds, also made at Flushing Oval in October, 1953.

Because Jackie has been one of the outstanding youngsters competing in the midget class, the success this class has enjoyed can be measured to some extent by his own reactions. He understands that it is necessary to train regularly in order to be a winner, but he also obeys the rule made by his parents that his school work must not be neglected. For him, the result has been that since he became both a cyclist and a winner he has been getting better marks in school to make sure that he will be allowed to train on his bicycle. Since proper rest is all-important to an athlete, Jackie understands the necessity for getting to bed at a regular hour every evening.



*Continued from page 67)*

team of pushers, he finally got it cooking, and several runs and trips to his workshop later, had managed to turn in 143 mph, top time of the day. His old car, which had been acquired by the team of Antenucci and Wolf, suffered a damaged gear box, probably caused by too many trips to the starter.

While the racers undoubtedly were able to keep warm from their starting efforts, a brave bunch of shivering spectators really enjoyed the goings-on—in fact, two of them bought Arrow cars before the day was over. Needless to say, the coffee and hot dogs ran out in mid-afternoon. Those who were able to manage runs ended up in this order: 1) Howard Fox, 1234 car, 143 mph; 2) Antenucci & Wolf, Fox, 141.28; 3) William Moore, Fox, 141.28; 4) George Feczko, Feczko car, 139.75; 5) Joe Sampius, McCoy Invader, 125.

As we have mentioned, the Lakehurst (N. J.) track is once again in steady operation, due mainly to the efforts of T/Sgt. Pitre ("Pete") Antenucci, US MC. He has been able to have the dusty infield covered with a smooth macadam surface. This track is located a few hundred yards from the huge dirigible hangar, and in fact almost on the spot where the great Hindenburg exploded and burned. Pete has an active partner in Jack Wolf, the two generally racing as a team. Information on racing at this location may be had from Sgt. Antenucci, who is Secretary of the Lakehurst Model Car Club (Naval Air Station, Lakehurst, N. J.).

**Mite racing up** Connecticut way is becoming increasingly popular. Mites are smaller versions of the regular .60 cable racers, powered by .19 or .29 engines and run on a 17½-ft. cable; this makes a lap equal to 1/48th mile. Regular races are held Mondays and Fridays at Pleasure Beach, Bridgeport, on an indoor track. Further details may be had from Walt Orgienus (262 Beach St., Bridgeport, Conn.).

Seems readers of our Model Car News column are located all over the world; following are excerpts of a letter received by Bob More from Pierre Basseler, Paris, France: "Being a model car enthusiast and a constant reader of Air Trails Hobbies, I read in the November issue that they will give each month the latest information on the various model car competitions held throughout the United States, which is good news to everyone, since it will replace the much-regretted Rail and Cable News.

"I must apologize for having taken the liberty of writing to you, but for a long time I have wanted to write to an American authority [I dunno about this, sez More] on model car racing, whom I could ask for information on high speed models.

"First of all I must explain . . . the situation in France . . . it is hopeless if we consider that high-performance engines, pans, gears and wheels are almost unobtainable, since not one firm has gone seriously into the making of these parts. Unless one goes to Switzerland or England to deal with so-called specialists who charge terrible prices for modified Doolings and other essential parts. What is more, the parts they sell us never permit us to get near the speeds you obtain in America.

"Needless to say that I am most interested in buying one of your fantastic cars. . . . I should appreciate your letting me know which car is considered the hottest thing on wheels on the U. S.

*(Continued on page 71)*



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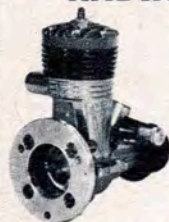
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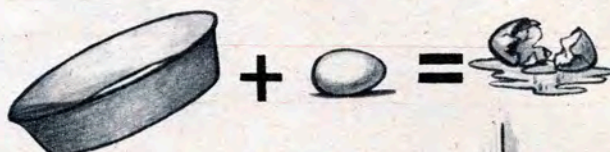
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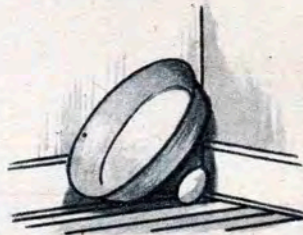
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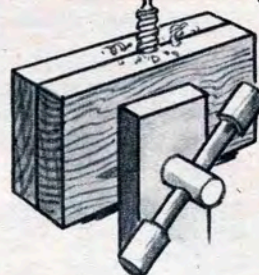
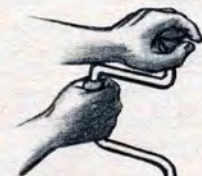
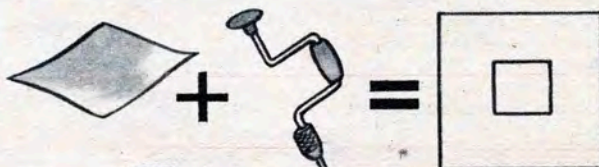
Robert Prince of Long Beach, Calif., wants to know if you can break an egg with a dishpan. Sounds so easy it's silly, isn't it? Well, as soon as your subject says "yes" you hand him or her a good-size dishpan and tell 'em to flail away, but first...



... you set the egg in a corner of the room. And no matter how much banging and beating goes on, your friend just can't break that egg. Aren't you mean?



This one you ought to save for the real "wise guy" in the crowd, the chap who knows it all. Tom Bloom of Benton Harbor, Mich., submitted this and it's a real baffler. You give him a bit and brace and a piece of paper and tell him to bore a square hole



... once you know the secret, it's easy! You fold paper in half, place it between two soft blocks of wood and clamp everything in a vise. Boring down from the top—square hole!



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(Continued from page 69)

market today. I have a business acquaintance in America for whom it will be no trouble to pay the necessary amount for the car you will be kind enough to recommend me. . . ."

Bob has written Pierre, and says he hopes to hear from many other ATH readers all over the world. Such letters as the one quoted above, and the one from Alaska in last month's Car column certainly show that ATH efforts in this field are appreciated in many countries besides our own.

A Scale Packard is the desire of Jere Warren (Box 37, F.P.O., Navy 115, New York, New York), but he wants to build a detailed model of the 1932 Victoria Hardtop, in a scale of 1½" to 1'. Jere can't locate plans for this car, though. Perhaps he might get something on this from Packard. Another possibility would be some of the people who are interested in Classic cars; while they might not be able to provide drawings, they could doubtless furnish pictures of the car. For information on this line of inquiry, we suggest you write to Robert J. Gottlieb, c/o Motor Trend magazine (5959 Hollywood Blvd., Los Angeles 28, Calif.).

Jere expects to fit the car with a McCoy 9 glow engine, and this brings up another problem—he wants to know where to get a rear axle gear box for the car. Possibly here he could adapt rear axle gearing from some of the race cars on the market, or could have some of the race car specialists build him one. We suggest he write to Carl Noward (1384 Berdan Ave., Toledo 12, Ohio) on this. At any rate, Jere, if you do build this car, send us some pictures and data on it.

Readers of ATH can look forward to an article on sub-midget race cars powered by internal-combustion engines that can really step around on the end of a cable. We also have news of another form of sub-min racing, this time by tiny electric cars that race on a rail track and run three at a time, each under the control of its own "driver." These cars are about 5" long and the races among them are very exciting. More on these electric cars in future issues.

**Commercial News.** Have you noticed that lots of the model engine and kit manufacturers are getting more active in the model race car field? We have had notes on new cars by Ohlsson, McCoy, Scientific and many others. Hope the trend continues, and we'll keep you up to date on new offerings in this field.

A plastic scale model of the Chevrolet Corvette has been marketed by Ideal Toy Corp. (Hollis 23, N. Y.) in kit form. The model (which is to a scale of 1½" to 1') is about 16½" long, 6½" wide, and has 2½" wheels; there are five of the latter, one being a spare that fits in the trunk as in the real car. There is a plastic engine to fit under the hood, and both the hood and rear deck open on spring-loaded hinges. No cement is required to build the car, which can be put together and taken apart as many times as desired. Kit contains parts for two working headlights, and also a transparent plastic top that is removable. This is just a push toy, but no doubt we'll soon hear of someone who has installed electric or glow engine power.

**Featured in the 1955  
AIR TRAILS  
MODEL ANNUAL**  
Model Race Car Nationals

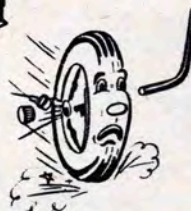
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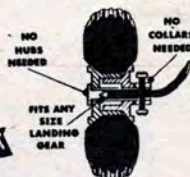
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## Model Boating

(Continued from page 63)

to work out a satisfactory arrangement with the L.A. city authorities concerning parking facilities at Alondra Park; progress on this seems possible at last and the Association will continue work on the matter through the L.A. County Hobby Advisory Council.

It was decided to reinstate the instructive sessions that used to be held at each meeting; to start this off, several members discussed new boats, building methods, engines and finishing details. Information on Assoc. meetings may be had from Bill Baughman (3432 W. 43rd St., Los Angeles 8, Calif.)

**Correspondence Wanted Dept.** As further proof—if any is needed—that ATH really gets around, we have received a letter from Vincenzo Lusci, 2 Castelfidardo Way, Florence 321, Italy, who is apparently a most active boat builder. He enclosed photos of many of his ships, ranging all the way from ancient square-riggers up to modern battleships. Mr. Lusci is most anxious to correspond with American boat modelers, to exchange drawings, ideas on construction systems and materials, etc. He will be happy to write in English, French or Italian, as required, and is a member of both Italian and French boating associations.

Some useful boating hints have been sent in by Anthony Gandiano (6732 Avenue R, Houston 11, Tex.), and you'll be seeing them in future issues. Anthony would like to correspond with boat modelers interested in steam or model racing yachts.

The following readers would like to meet local boat builders, as they wish to join a model boat club, or help form one: Robert W. Holmes (7711 Eads Ave., LaJolla, Calif.); Gordon R. Toomey (2812 W. 144th St., Gardena, Calif.); C.F.H. Jenkins (Port Alice, B.C., Canada); Ed Jones (167 Elm Court, Burbank, Calif.); Joseph H. Traut (5743 Eddy St., Chicago 34, Ill.). All these builders are very active—but all alone in their areas.

**Two model Coast Guard boats** controlled by R/C were operated on the swimming pool at the Dundalk YMCA in Baltimore recently. They were made to plans by Sam Rabl, who built one of them; the duplicate was built by Dick Hill. Sam's boat operated to perfection but Dick's cut up quite a bit; the latter had a sequence form of control which half the time did just the opposite of what Dick signalled. However, it was all very impressive, and only Sam and Dick knew things were going haywire; the many spectators thought it was all fine.

Sam has recently finished an R/C tug boat fitted with steam power, and finds that water vapor and RF just don't mix; the radio equipment went out of operation about 10 minutes after the tug was launched, and was found to be simply watersoaked from the condensed steam in the closed cabin. It is apparent that the radio equipment of such a boat must be well sealed to prevent this sort of malfunction. This reminds us that we have seen a model boat radio receiver wrapped up in one of those plastic bags that vegetables come in; the idea here was to protect it should the boat founder, but the same sort of bag might keep condensed steam out, too, if the open end of the bag were well folded.

**Commercial Items.** A complete ready-to-use outboard boat is available from

Atwood Motors (3716 Park Pl., Montrose (Calif.) and sells for \$14.95 complete with an Atwood outboard motor. Concern also has an accessory kit that includes fuel, battery leads and clips, etc., for \$1.49.

Another kit for a model boat especially designed for R/C use is the Chris-Craft Monterey, offered by Sterling Models (1530 N. Hancock St., Philadelphia 22, Pa.) for \$5.95. This is Kit B-13M, and the boat is 21" long, with a 7-1/8" beam; it is especially designed for use with model outboard motors, either gas or electric. Kit includes large 35 x 45" plans, and all wood parts are die-cut. Cast metal fittings are also included.

Plans and all metal fittings for two sizes of high-speed model racing boats may be had from Charles Baxmann (2991 Garland Ave., Detroit 14, Mich.). The X-5 is for .29 engines (F class) and the metal parts and complete plans sell for \$7.95. The larger XB-100 boat takes the .60 (Class C, D or E) engines, and metal parts and plans sell for the same price. Plans or hardware may be had separately. Mr. Baxmann can supply many sizes of speed boat props, struts, engine mounts, etc. The two boats are competition-proven designs, X-5 having made an official record of 63.84 mph, while the XB-100 has topped 80 mph.

We have received many inquiries for sources of 4-cycle boat engines, multi-cylinder engines, casting sets, steam powerplants and parts, so we set about to locate supply sources. There are several, in addition to those we have mentioned in past issues. For gas engines from one to four cylinders, try Wall's Model Engine Laboratory (5900 N. Fairfield, Chicago 45, Ill.). Mr. Wall does not sell finished engines—only plans, casting sets, and a few small parts. However, he does sell some of the more difficult parts in finished form, such as piston rings, camshafts and crankshafts, etc. He has issued an illustrated catalog of these engines.

If you are interested only in steam, you can get plans, parts, castings or finished engines and boilers from Anton Bohaboy (2297 Price St., Rahway, N. J.). Mr. Bohaboy can furnish engines all the way from a little single-cylinder slide valve engine ready-to-run for \$15 (less boiler) up to a special poppet-valve 3-cylinder racing powerplant for \$60. He also makes boat propulsion fittings, boilers, steam traction engines and locomotives, etc. Illustrated catalog costs 25¢.

One of the most complete stocks of model steam and gas engines, locomotives and traction engines, fittings, raw materials, model making tools, etc., that we know of is carried by Charles Cole (1355 Church St. Ventura, Calif.). Mr. Cole is not a manufacturer, but carries proven models from other makers, both American and from overseas. His 50¢ catalog is a regular encyclopedia of models and information on models, and is well worth the price—if you are at all interested in models generally—just as 68 pages of fascinating reading matter.

These three gentlemen have been in business for many years; Mr. Bohaboy started his outfit in 1920, Mr. Cole in 1928, and we know for sure that Mr. Wall was selling his beautiful gas engine kits back in the thirties.

**Featured in the 1955  
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## No Boom!

(Continued from page 56)

together, cut out and set a sheet of lead for ballast into the center sheet of balsa and cement securely in place. After the cement has set on the keel block, outline the shape shown in drawing, cut with a coping saw. Set the keel into position, seven inches back from the bow. Cement securely and hold in place with finishing nails driven through keel and hull. Block up keel to the hull with pieces of balsa and coat well with cement.

Using very coarse sandpaper, working it by hand, sand down the hull and keel until it streamlines into one unit. Round off and "thin" down the base of the keel, completing the streamline where it began at the hull.

Drill a 1/4" hole 1" deep five inches back from the bow on the deck for the mast, and a small 1/8" hole, 1" deep, one inch from the bow, for the pennant mast. Make certain that these are on the center line of the deck.

Outline cockpit heavily as shown in drawing, cutting into the wood with the pencil. Sand deck smoothly. Cut out a piece of soft sheet metal 21" long, 1/2" wide, with points of metal on the strip that can be sunk into the soft wood deck. This is the frame of the cockpit. An inch overlap offers a joint for cementing the frame together, metal to metal. Set in place, punching down into deck and pointing with cement. Insert main and pennant masts, cementing securely.

Sand the entire model with fine finishing paper. Give it a coat of primer paint. Allow to dry between coats, giving the model three coats of white enamel, sanding lightly after each of the first coats.

The cockpit windshield is made from a sheet of thin plastic. Cut exactly as shown in the drawing. The little V in the edge of the plastic allows for shaping to cockpit contours. Hold in place until cement dries. Paint the metal edge of the cockpit with red enamel.

The sail is cut from standard model sailcloth or thin cloth, cut to the shape shown in drawing. Mount sail to mast, using standard model sail hooks and line. A small piece of soft metal attached to the keel makes an excellent rudder.

## Painting Plastic Models

(Continued from page 29)

attached to the runners. We paint most large figures and letters providing they are outlined in the plastic. If necessary the insignia can also be painted in using a small brush with all but 8 or 10 hairs cut off (off the brush, that is). The brush should be cleaned with thinner after each color. Masking tape may be used when painting large areas such as anti-glare locations and de-icers.

Assembly may now be completed. It is advisable to support the parts after they have been cemented as the cement will loosen the joints slightly before it hardens.

We cut most decals to outline for better appearance with the exception of the smaller words and figures. Apply as per the instructions on the decal backing. After the decal has dried for a day, brush on a light coat of clear spar varnish. The varnish may take as long as two days to dry, but it will protect the decal indefinitely. If an old untreated decal begins to peel off it may be tacked down with a little plastic cement.

## Letters

(Continued from page 14)

Sepulveda F/F Field Open! . . . We wish to announce the opening of a free flight model airplane flying site in the Sepulveda Flood Control Basin, Van Nuys District, Los Angeles, Calif. This field consists of more than 30 acres of flat ground set in an unpopulated area of some 2000 acres.

Although the entire area is ultimately destined to become a recreation park under the direction of the Los Angeles City Department of Recreation and Parks, the field was to be open for flying from Nov. 1, 1954 on. We want to encourage all aero modelers to participate in free flying, power and rubber, and radio control flying at this new field.

C. Reisman, Secretary-Treasurer, L. A. Model Hobby Association

Chanute Hang Glider . . . In answer to those questions concerning the "Chanute" glider that my son and I constructed, plans are not available as I know of at present. However, we found them in an old book printed in the year of 1909 called "How to Build a Bi-plane Glider," also another book called



"Flying Machines" by Jackson-Russell-Chanute, 1912. These books are probably available at the Historical Branch of the Institute of Aeronautical Sciences Inc., New York, 2 East 64th Street. We simplified fittings to hold down the cost, otherwise it was all originally constructed.

Richard Kemp, Compton, Calif.



**THREE VIEWS  
ACTUAL SIZE**

## Atwood's Air-Cooled Inboard Has .049 Displacement For "Half-A" Boat Power

■ The manufacturers of Atwood engines offer a complete line of Half-A class marine engines. For the first time, the model boating enthusiast has a choice of four types of engines designed expressly for him—inboards and outboards, water cooled and air cooled.

Gone are the days when the engine dictated the type of scale model boat that could be built and operated efficiently. Enclosed cabin cruisers were extremely difficult to design in previous years because of the overheating problems encountered by mounting the engine deep within the hull. Air circulation was usually insufficient for extended periods of operation.

In order to combat these overheating problems, engines through necessity were mounted out in the breeze even though the design did not call for it. Cabin cruiser designs often required the addition of large air scoops which made even the most detailed scale model look unrealistic. Frequently these scoops proved inadequate at slow speeds. Small fans powered by tiny electric motors mounted directly forward of the engine sometimes worked well enough to make extended runs safer.

Now, however, in the Half-A class, these earlier contraptions and design limitations no longer offer problems. As an example here comes Bill Atwood with his four types! The water-cooled inboard discussed in the October issue of *ATH/-FYM* is good for installation in any fully enclosed cabin type model and will operate efficiently without the necessity of air scoops or fans.

However, racing type hydroplanes, designed primarily for speed and not for scale appearance, do not require a water cooled engine. The forward speed of the model and the relatively high mounted position of the engine are usually sufficient to keep the operating temperature well within the limits of safety. An air-cooled inboard is suited for such a model boat.

As with all air-cooled engines, extended runs should never be attempted until the engine is well run in. This is especially true with marine engines. Fitted with flywheels, these engines turn up at considerably higher speed than their aircraft cousin and are therefore more prone to overheating.

The Atwood inboard marine engine comes fitted with a blue anodized aluminum flywheel. It is friction driven through properly matched tapers on the crankshaft and in the flywheel. It is deeply undercut on its rear surface. Thus undercut it greatly reduces bearing loads at the extreme end of the crankshaft. It is deeply grooved and knurled to afford good gripping properties for the starting cord. Attachment of the flywheel is by means of a threaded extension shaft which passes through it and into the hollow crankshaft. A nut then secures the flywheel to the shaft. This extension shaft is of sufficient length to afford a simple means of coupling the engine to the propeller shaft. Although metal type universal couplers are best suited for boat work, as they eliminate slippage, rubber or plastic tubing has proved quite satisfactory in all but very high-speed models.

The Atwood inboard is composed primarily of screw machine parts. Only the crankcase which includes the intake tube and the back cover plate are cast of aluminum alloy. As both the water-cooled and air-cooled versions of this little engine make use of similar moving

parts, the unbalanced crankshaft found in the water-cooled version is used on this inboard we're discussing. However, the weight of the flywheel seems to cancel out any vibrations that might otherwise show up.

By using a ball and socket joint between the connecting rod and the piston, the need for a wrist pin and pads has been eliminated. This feature allows the piston to revolve during operation and thus results in even wear. By allowing the piston to rotate it becomes quite apparent that conventional methods of transferring fuel and use of a straight baffle could not obtain. Instead, the Atwood Half-A employs a slight dome on the top of the piston and 360 degree intake and exhaust ports. Special attention has been given to the needle valve and body design. Both parts are machined from brass and are designed so that the needle actually seats into the fuel inlet orifice. A coil spring is also used to eliminate any needle valve "floating."

The cylinder barrel is machined from steel and threads into the crankcase. The turned aluminum head which includes most of the cooling fins is threaded to the cylinder. The only two machine screws used serve a two-fold purpose: that of holding the back cover plate in place and as radial mounts.

Starting of the Atwood inboard is exceptionally quick once the proper needle valve setting is found. Of the two methods usually employed in starting proced-

(Continued on page 88)



# IT'S *Tornado* IN PROPELLERS



**"For Championship Competition"**

**MADE FOR JUST THAT PURPOSE**

- **CLARK-Y Air Foil Section** — most versatile of all — delivers highest THRUST to POWER ratio.
- **TRUE PITCH — SLEEK THIN BLADES — EXTRA SMOOTH FINISH** — adds up to more thrust with less torque allowing engine to develop full H.P. for maximum performance from engine and fuel.
- **STRONGER** — ordinary prop would have to be 3 times as thick to give the same strength. Surface impregnation of plastic into wood makes this possible.

Get a real flying thrill — in your next contest or for pleasure. Mount a Tornado Propeller on your engine.

Consult Prop Chart at your dealer for exact size and pitch to use with your engine.

**"For Consistent High Quality"**

GRISH BROTHERS • ST. JOHN 1, INDIANA

*Tornado*  
**Propellers**

## New Painting System

(Continued from page 46)

approaches the task of duplicating fine masterpieces quite differently.

Basically, Silloo painting consists of starting with a clear translucent plastic panel on which accents and difficult outlines are pre-printed and a silhouette chart for each color in the painting. The areas are painted in on the plastic sheet following each individual silhouette guide chart which shows plainly through the transparent plastic. In the "Sankaty Lighthouse, Nantucket" subject which has been illustrated here there are 11 different silhouette guide sheets—white areas on brown paper that are placed

one by one and in the order marked under the plastic sheet. As you apply the specified color it blanks out the white guide areas. When all the white has "disappeared" from the guide sheet you have finished with that particular color and are ready for the next silhouette sheet and its accompanying color of oil paint.

Queried as to how he came to develop this amazing silhouette system of oil painting, the elder Mr. Brebeck (his son Charles L. Brebeck is a member of the Herkimer Tool & Model Works firm too) revealed that he has been painting for nearly 40 years, that he took formal lessons as a youth in England and as far as he is concerned, the design of engines and similar products is merely "painting in steel" since such creations must have eye-appeal just like a painting, be as well

balanced visually as they are mechanically.

Silloo was more than six years in the development stage, according to the senior Brebeck. By painting with dark colors first, the Silloo enthusiast can overlap without ill effects—in fact that will give some fine shading. Overlapping in numbered paint sets can cause considerable difficulty especially, if one obscures those all-important numerals.

At the present time 12 different subjects are offered in Silloo sets which are complete in every sense, even containing a masking border for mat board edges. Subjects of special appeal to young fellows include "Fishing Schooner at Sea," "Covered Wagons on the Trail," "Hunting Dogs Afield," and of course, "Sankaty Light, Nantucket."

FOR  
.19 TO .29  
ENGINES

dmeco's *Continental*  
FULL STUNT MODEL



A SEMI-SCALE AIR RACER  
WITH TOP STUNT PERFORMANCE  
A FINE SUPER DELUXE KIT.  
PLUS DMECO'S FAMOUS QUALITY!

10 YEARS OF PROGRESS BUILT INTO ONE DESIGN!

**DE BOLT MODEL ENGINEERING CO.**

WILLIAMSVILLE

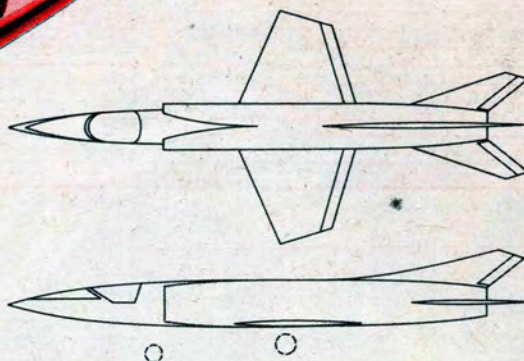
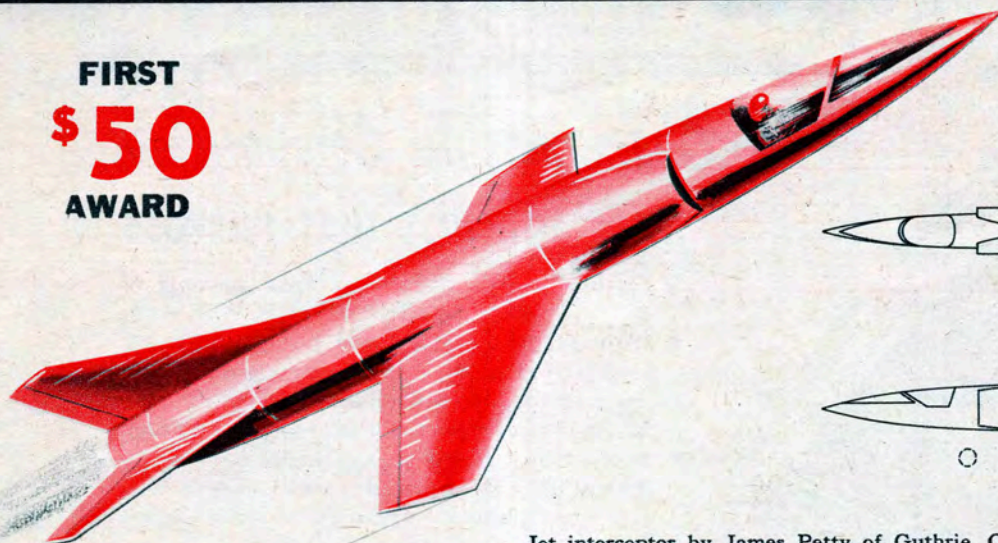
"HOME OF DESIGN-ENGINEERED MODELS"

NEW YORK USA



# AIRCRAFT DESIGN COMPETITION

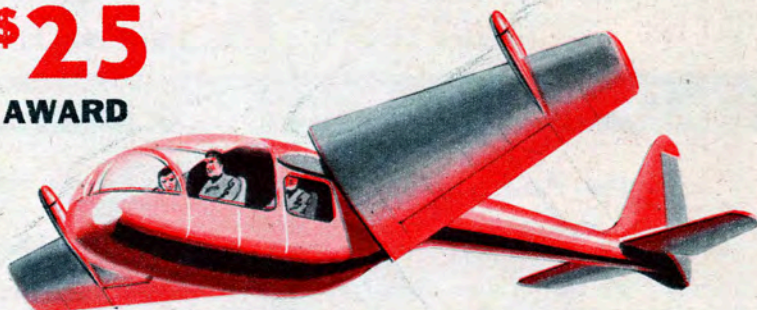
**FIRST**  
**\$50**  
**AWARD**



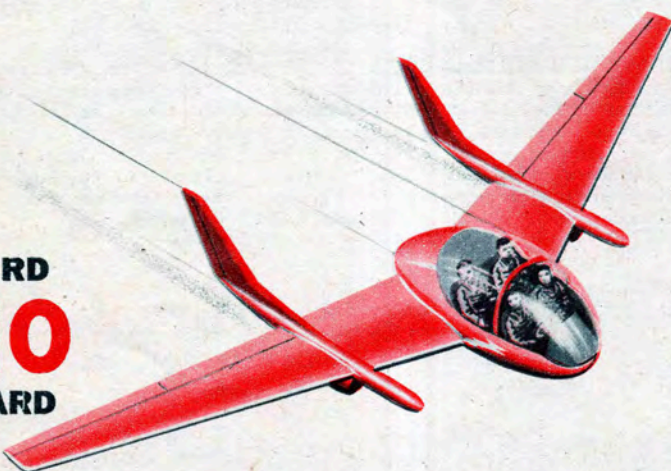
Jet interceptor by James Petty of Guthrie, Okla. Wingtips are canted at 19 deg. to reduce tip-drag. Forward part of fuselage with cockpit is a jettisonable capsule, lowered by chute in case of emergency. Plane carries two air-to-air missiles. Span is 20 ft.

**SECOND**  
**\$25**  
**AWARD**

Two-place convertiplane by Z. Subotich, of Toronto, Canada. Takes off and lands vertically by rotating wings at 90 deg. so that the propellers turn horizontally. In horizontal flight, wing and propellers are in conventional position. Plane can be powered either by one central engine in fuselage or two mounted on wings.



**THIRD**  
**\$10**  
**AWARD**



A four-place jet plane by William Zeman of Little Falls, N. Y. 300-lb. thrust turbojets are located in the booms, which also carry some of the fuel supply. Trailing edge of swept-back wing carries ailerons and elevator controls. Construction is all-metal, wingspan 43 ft. Large area gives plane a low stalling speed. Top speed 275 mph.

Rules governing this "aircraft of the future" competition are as follows: Three-view sketches of the envisioned aircraft will be required. These should be not less than 8½ x 11 inches for the entire three views. Give sketches of the complete airplane or space craft in three-quarter front and rear positions. Photos of a model of the proposed design may be included. Informa-

tion on the powerplant(s), estimated performance, dimensions, and explanations of any unusual features are required. Data as to age, occupation or schooling of the entrant will be welcomed by the editors and judges. The design may be of any type; space craft, commercial, military planes (fighters, bombers, troop transports), planes for the private flyer and sporting

or racing airplanes. The entry each month judged the most practical or of the greatest significance will receive an award of \$50; \$25 for second place and \$10 for third. Mail entries to Airmen of Vision, c/o Air Trails HOBBIES for Young Men, 304 E. 45th St., New York 17, N. Y. The editors regret they cannot enter into any correspondence on submissions.



## Careers in Photography

(Continued from page 35)

commercial photographer must work surely and quickly. In many cases, his work delays or interferes with production as when making pictures of factory operations, or his client must spend several hours getting the subject ready for the photograph. The client expects the photographer to do his work quickly and competently. Retakes are expensive and one of the surest ways of losing a customer.

The customer also expects and demands prompt delivery of his work. This means a well-organized, competent laboratory staff, or work in the darkroom after business hours. Finally, the customer does not ordinarily pay cash but only after bills have been submitted, which means accurate records must be kept.

### INDUSTRIAL PHOTOGRAPHER

The industrial photographer works for industry. His job is likely to be a varied one. He may photograph important visitors to the plant, make pictures of 25-year employees for the firm's house organ, identification photographs of new employees for admission badges; photographs of new plants in construction or new facilities being installed; photographs of replacement parts for dealers' catalogs; service photographs to show assembly, adjustment, or operation of product; portraits of the boss, copies, murals for display purposes, and he may cooperate with the engineering department in photographic problems. Finally, the photostats, blueprints, and other copies of engineering plans, etc. may be his responsibility. He is expected to do these things for the company better, and at less cost to the firm, than they can be had from outside photographers. Often the department is expected to pay its own way from the income received for work done for other departments.

Ordinarily, the best opportunity is (1) with a firm that has just decided that it would be cheaper and better for it to have its own photographer than to call in an outside photographer or (2) a firm which can be sold on the idea that photography represents a cheaper and better method of doing something than the method currently used. This gives you the opportunity to make your department—and you—indispensable to the firm. Then, as the need for your services expands, you will add others and in time you may find yourself the manager of a department.

The photographic department of General Motors—General Motors Photographic—with over six hundred employees, came about in just this way.

### ADVERTISING ILLUSTRATION

Many young photographers are interested in advertising illustration. They have read about well-known illustrators and how some of their pictures were made and the prices they receive for their pictures. Here is a field that is challenging, a field with real opportunity for creative ability and with rich rewards for the right person. That is all true, but often overlooked are the long years of preparation, for breaking into advertising illustration is like writing short stories—there are many rejection slips before your work begins to find favor. Nor can you rest easy once you have "arrived." Art directors, like editors, are always looking for "a new approach" or "fresh viewpoint," and you can lose an important account overnight to another

# NEW Allyn ACCOMPLISHMENTS

### The Convair F102 Interceptor

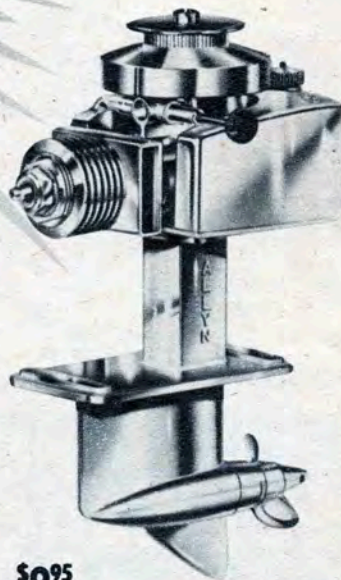
is the latest newcomer to Allyn's fine line of plastic plane kits. Built true to scale and specifications of Convair's own beauty of the skies, this model, like all in Allyn's line, carries the approval of its own aircraft company's engineering group. In fact, these models are the standard of the aircraft industry. Molded in plastic the color of its prototype, complete with decals of insignia, it comes with built-in swivel socket and plastic base.



\$2.49

### The SEA FURY .049 Inboard

is the newest motor in the model boat engine field. We, at Allyn's, are mighty proud of her! You will be, too. She is easy to install for it is no longer necessary to use engine mounts, universals, shafts, and shaft bearings. Especially designed for inboard use the fly-wheel is easy to reach thus providing simple and quick starts. Less power is lost in this self-contained free running unit to give you the maximum in inboard operation. The first to introduce gas powered outboard engines to boat modelers, Allyn leads the field! This newcomer contains all the best features and developments acquired through our years of experience.



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Look to Allyn for the BEST!

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## Sona-Jet



COMPLETE OPERATING INSTRUCTIONS WITH EVERY ENGINE

PRICE \$14.95 Plus Postage

### FEATURES:

FUEL — Miniature Glow-Plug Fuel (AA)  
IGNITION — No Spark Plug or Battery required  
THRUST — One Pound Static

IDEAL ENGINE For Free Flight, U-Control Model Boat or Car

GUARANTEED TO BE THE EASIEST STARTING AND MOST RELIABLE ENGINE ON THE MARKET TODAY. PLACE YOUR ORDER NOW.

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As much as  
**2000 EXTRA RPM!**

Supercharged performance  
... that's what you get when  
you have Gold Seal 2000  
Racing Fuel in your engine!  
Recommended by Bill Atwood,  
noted designer and manufacturer  
of model engines, and scores of  
others who want top performance.

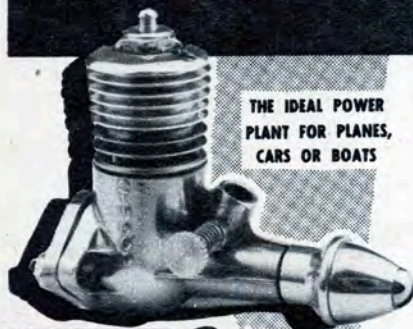


EASY TO WEST  
IT OUTPERFORMS  
THE REST!

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MFG. CO.  
LONG BEACH, CALIFORNIA

**HIGH  
POWERED!**

**ATWOOD**  
**1/2-A "Cadet"**



THE IDEAL POWER  
PLANT FOR PLANES,  
CARS OR BOATS

PERFORMANCE  
UP TO  
17,000 R.P.M.  
•  
WEIGHT  
1 oz. COMPLETE  
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EASY STARTING  
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*But* **LOW  
PRICED!**  
**\$4.95**  
• Includes  
Propeller, Spinner &  
Wrench

**ATWOOD MOTORS**  
3716 Park Place, Montrose, Calif.

**What's  
Your  
Hobby?®**



## Richard C. Birkebak Craftsman's Guild

■ "Here's a picture of me with some of the model cars which I have built for the Fisher Body Craftsman's Guild. I started building these cars when I was 12 years old and have built one car each year since that time. The cars are carved out of wood and do not have to have any movable parts. The trim on some models is made from aluminum but on my first models it was just painted on. The wheels are made of various materials starting with plaster of paris and then wood and finally rubber. Headlights were made from plastic and watch crystals. I brushed on the paint for my first car but after that borrowed a spray gun and put regular car paint on the rest. It took me from six to seven months to build a car de-

pending on how much school work I had to do. The car I hold in my hand is this year's car and is not completed in the photo.

"This is an annual contest and has two classes, one for 12 to 16 year olds and one for 16 to 19 year olds. This is my last year of competition and during the eight years I have entered I have won seven prizes totaling four hundred and fifty dollars which I have used to pay my tuition at the University of Minnesota. I highly recommend this hobby for any boy who likes to work with his hands. It is satisfying and educational and if you have any imagination your car will be a winner. I took second place in Minnesota this year and my twin brother took 1st."

Now . . . What's your hobby? Is it of special interest to mechanically minded young fellows? If so, tell us about it! Send photographs, details on how you got started, to "What's Your Hobby," Air Trails HOBBIES, 304 E. 45th St., New York 17, N. Y. We pay you \$25 for first photos, \$5 for extra photos so used.

photographer whose work has caught the fancy of the agency.

Sometimes you are asked to do the seemingly impossible—and promptly. Advertising photography is hard, nerve-racking work at times and there is not as much demand for creative work as you might think. Sometimes you get an assignment which gives you scope for your own ideas, but usually the idea has been worked out pretty thoroughly by the advertising agency and you must follow the layout. The art director will sometimes insist on selecting models, approving the set, the arrangement of the models, and will even dictate the expressions on their faces.

The advertising illustrator must be a superlative technician. Art directors demand high-quality photography. Technical quality must be above reproach—nothing less is acceptable.

### PORTRAITURE

The portrait photographer must be interested in people, if he is to be a real portraitist—not simply a photographic technician. If he is to use artistry above the level of the passport picture, he must see people as individuals and endeavor to get that personality into his pictures.

The independent portrait photographer must compete with the large chain

organizations unless he is in a small town at some distance from a large city. It is estimated that as much as one-third of all portrait work-in-dollars is done by the chain studios. The typical chain has from twenty-five to fifty studios in as many cities, and a central office and finishing plant. The exposures are made in the studio and sent to the finishing plant for processing and proofing.

The customer's order is sent to the finishing plant which makes the prints and forwards them to the studio for delivery. Good studio locations, effective promotion and lower costs from the centralization of laboratory operations, plus careful studies of customer preferences all combine to make the chain studios a serious competitor to the independent portrait studio. On the other hand, the chain studio concentrates on a few sizes and styles of proven salability and carefully avoids originality which would make customer acceptance more speculative. Thus the independent portrait photographer who puts himself into his work and does "something different" can make a name for himself if his work is backed up with effective promotion.

Unless one is confident that he has unusual ability and is willing to make the fight to gain recognition in a large city, the smaller towns and cities appear to offer the best opportunities in portrait



## BLUE RIBBON PROOF

### ESSCO R/C PRODUCTS IS/TOPS

#### SEE SOME OF OUR BLUE RIBBON UNITS

Featured in A.T. this issue

ESSCO'S complete line of R/C materials is all of **BLUE RIBBON QUALITY**. Be convinced, check this and our previous ads. Ask the R/C boys whom we serve. Almost 10,000 all over the world, plus hundreds of reliable authorized ESSCO Dealers who carry our complete line will testify to this well known fact.

#### NEW ITEMS NOW IN STOCK

Ten position stepper relay, operates on 6V, enables you to get nine operations on single radio channel. #10 position is the neutral. Will operate from hand key or telephone dial, small size, wt. 1 lb. A wonderful gadget for boats, etc. A Super ESSCO Special.....\$11.95  
New lightweight high grade relay by Price Electric available 5000 and 8000 ohms. See McEntee's col. Dec. A.T. ESSCO is exclusive dist., only.....\$5.95  
Deluxe ESSCO Lorenz Mopa RF assy. A novel complete unit, wired-tested, ready for install. in your case. The easy and painless way to obtain all the features of Ed's fine transmitter. Another ESSCO FIRST, only.....\$18.95  
In kit form, requires only 1 hr. to complete.....\$13.95

#### ATTENTION OWNERS OF CITIZENSHIP AND OTHER COMMERCIAL TRANSMITTERS!

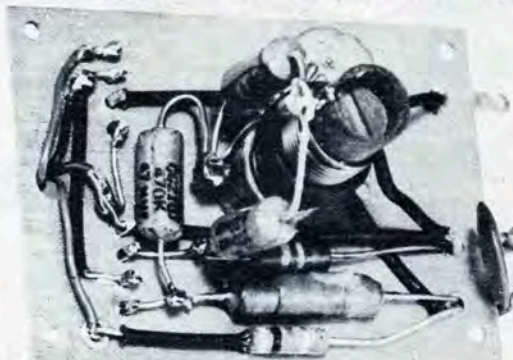
No more expensive battery replacements required. The ESSCO CIT-PAC fits on bot. of Citizenship xmt. case, delivers 135 volts at 30 ma. This unit is an exclusive ESSCO design, all new materials, no surplus JUNK used.  
Complete, ready to install.....\$12.95  
Special Long Life wet cell battery for above.....\$2.95  
The ESSCO BAT-CHGR will recharge all R/C storage batteries from 110 VAC, completed unit, not a kit.....\$5.95  
NEW ESSCO LORENZ 2 tube receiver. Exclusive ESSCO UNIT-MT, single deck construction, with PRICE relay, allows for all favorite methods of mtr. In model, only 1 1/4 x 3 1/2, wt. less 3 oz., complete set ready for install.....\$21.95  
Complete pts. kit/build your own.....\$16.95  
Since only 3 short pcs. of wiring are used in the construction of all the ESSCO Lorenz receivers, printed circuit construction is not desirable. It is widely known that hard landings will often cause circuitry breaks w/P.C. construction.

**NOTE:** All ESSCO-LORENZ receivers and kits come equipped with the new 250 hour life RK-61. This new improvement in the tube was made possible through our cooperation with the mfr. by placing large orders for this tube. Our kit-set sales average 5000 a year, making ESSCO the WORLD'S LEADING user of this type tube. You are always certain of obtaining the new tube when you purchase the ESSCO Lorenz sets. The economical long life of this tube now makes obsolete all single hard tube receivers with their fussy adjustments and unreliable range. Try an ESSCO Lorenz set on a money back guarantee and be convinced.

# BIG NEWS

FOR GOOD ALL ROUND SERVICE

## THE ESSCO LORENZ 2 TUBER IS TOPS



### — FEATURES —

New long life (150 hours) RK-61 1st stage idles at 0.5 ma. . . . means extreme sensitivity with economical battery drain. Hard tube 2nd stage triggers from 0 to 3 ma. Complete kit of highest quality components, drilled chassis, wound coils and BRAND NEW factory adjusted Sigma 4F relay

only .....\$15.95

Assembled-Tested, ready for installation .....\$19.95

## The New Improved Essco Lorenz Mopa Transmitter

There is none better!

Reliable economical long range control of any receiver, especially good for use with the ESSCO Lorenz 2 tuber. Easy to build, easy to tune up, stays put, oscillator will not kick out due to body capacity or antenna loading changes. Reliable high power. It's full of desirable features. You name them — this transmitter has them all. The ESSCO kit includes all parts, wound coils, drilled chassis and cabinet. A few hours work will complete the ESSCO kit and if correctly wired and adjusted will equal the performance obtained by the designer himself.

The Improved Essco Lorenz Mopa Transmitter.....\$24.95

Special combination: Receiver and transmitter kits.....\$39.95

Factory wired and tested, ready for use (less batteries).....\$4.95

Serving the Entire R/C Field  
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NEW YORK 13, N. Y.

ALSO AVAILABLE FROM  
AUTHORIZED  
**ESSCO DEALERS**

Serving the West  
**ESSCO - WEST COAST**  
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PALO ALTO, CALIFORNIA

photography today. There are satisfactions in small-town life, in the closer personal associations in a small community, which are often overlooked by those who somehow feel that their talents would be wasted in any but a large city. There are careers in photography—such as advertising illustration—which are possible only in a large city, but portraiture is not one of them.

### PHOTOFINISHING

It is estimated that thousands are now employed in photofinishing. Most of these are women and, as in other mass production industries, there is a high degree of specialization; in other words, a worker is expected to be competent on a given job and may know little of other jobs in the plant. Many jobs are also of a routine nature. While salaries, hours and working conditions are much better than years ago, and now compare favorably with other industries, production jobs in a finishing plant will not interest many as a career. Those with an interest in management and production, however, should not overlook photofinishing. There are opportunities frequently for those with a good knowledge of photography and ability in management and production, to obtain excellent positions as plant managers, production managers, etc. The salary for such positions varies with the responsibilities of the position, the size, financial condition and location of the plant, but is usually from \$5,000 up.

Not to be overlooked is color finishing. This form of photofinishing is only in its infancy. It will, beyond doubt, grow in time to rank with photofinishing as a multi-million dollar business. Now is the time to get in on the ground floor, so to

speak, either as an independent color processor in a plant of your own, or as a technician, or technical supervisor in an established plant. At present, it is possible to gain a foothold in color finishing with a comparatively small capital outlay, since the field, unlike photofinishing, is with one or two exceptions composed of small organizations.

### SPECIALIZATION

There are many opportunities to combine photography with other interests. An interest in livestock can lead to livestock photography, traveling to the various livestock shows and farms to photograph stock. An interest in flowers and plants can lead to specialization in horticulture photography for seed and flower growers, garden magazines, etc. Training in architecture may lead to architectural photography for architects, builders, suppliers of building materials, landscape architects, architectural and other magazines.

There are many other examples of specialization in photography. H. I. Williams specializes in foods and there are studios in Grand Rapids, High Point (N.C.) and elsewhere that specialize in furniture. To specialize successfully, however, there are at least four conditions which must be met: (1) You must be well informed, if not an expert, on the subject. An interest in animals, for example, is not enough to enable you to qualify as an animal photographer. You must know the distinguishing points of each breed, what to emphasize and what to conceal. (2) The field must be large enough to provide a sufficient amount of business. (3) You must know where the business is and how to reach it. Finally (4) you must be a good businessman.

There are a number of photographers who specialize in making photographs for use as evidence in legal proceedings, and many more are police photographers. The latter have usually come up through the police department. They must, in any case, be familiar with police work. The independent photographer who specializes in legal work must be an expert photographer and familiar with court procedure, because in many cases he must appear as an expert to answer questions and establish the reliability of his photographs as evidence.

(Editor's Note: Next month, in the second and final installment of this article, Mr. Neblette takes up other kinds of careers in photography such as the photographic industry, selling in photography, photomechanical reproduction, laboratory work, and motion picture photography, including the TV field. Also, he tells you how to go about actually getting into the branch of your choice, with practical advice on applying for a job.)

## Under Control

(Continued from page 17)

carrier is always on when the rudder escapement is being used.

Thus, Paul gets: signal and tone off—both escapements neutral; signal on and tone on—rudder operated, elevator neutral; signal off—rudder neutral, elevator operated. Tone has no effect on the M-M, while the Good receiver works just the same with or without signal, as long as no tone is sent. No interaction has been noted between the two receivers working on 27 1/4 mc., even though they are mounted one only 1/4" above the other in

(Continued on page 84)



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## MECHANICS TECHNOLOGY SCIENCE

## NEWS Review®



**McDONNELL F-101A VOODOO** (top and bottom pix) to be assigned to Strategic Air Command. Plane believed to be world's most powerful fighter. Capable of supersonic speed, it will carry atomic weapons and is equipped for inflight refueling. Two Pratt & Whitney J-57 turbojets provide 20,000 lbs. of thrust. Span is 39.7 ft., length 67.4 ft. Wings and horizontal tail are swept back 35 degrees. Parachute brake in tail reduces landing roll. . . . Experimental Army truck, weighing 6000 lbs. less than conventional model, produced by Chrysler Corp. Body, wheels and axle are aluminum. Vehicle is equipped with disc brakes, independent four-wheel suspension and powered by a six-cylinder air-cooled fuel injection engine rated at 200 hp. The T-55, as the truck is designated, can climb a 60% grade and has a top speed of 60 mph. . . . Boeing B-29 Superforts being retired from service. Those in the Pacific were flown to Davis-Monthan AFB in Arizona and placed in storage. Crews will transfer to B-47s.

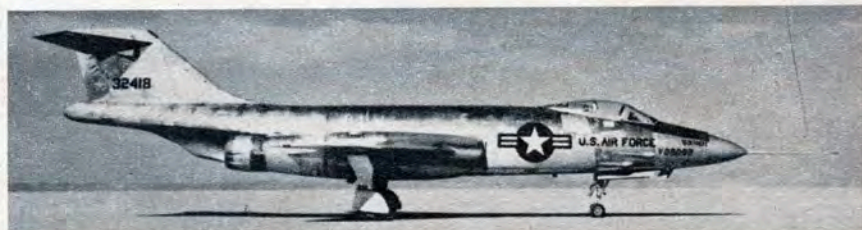
**JET-POWERED LIGHTPLANE**, first in this country, designed and built by amateur builder Harold Coonley, of Miami, Fla. Craft is powered by 360-lb. thrust Continental Turbomeca Palas engine. Looks like Continental-Goodyear midget racer. . . . Chaney Award for act of valor, extreme fortitude and self-sacrifice presented by USAF Chief of Staff Gen. Nathan Twining to Capt. Edward G. Sperry in connection with tests of downward ejection seat from B-47 bomber. During one of the tests, Capt. Sperry bailed out at an altitude of 45,200 ft. at a speed of 450 mph, delaying the opening until he fell more than 30,000 feet. . . . Twenty-eight percent of the delivered price of a new car consists of taxes.

**FRANKFORT ARSENAL**, in Philadelphia, developed a new 106-mm anti-tank recoilless rifle, "The Bat," for Army

Ordnance. Weapon weighs less than 500 lbs., uses new type of ammunition and is said to have double the penetrating power of any existing recoilless rifle. . . . Thimble-size rocket fuse developed by the Elgin National Watch Co. for the armed forces is one-tenth the size of fuses which were considered miniature miracles ten years ago. . . . Tanker version of Boeing 707 jet transport, ordered by USAF, is designated KC-135. . . . Civil Aeronautics Administration granted approved type certificate to the Hiller ramjet engine. Powerplant weighs 12.7 pounds, develops 45 hp. Also due for CAA certification is the H-32 ramjet helicopter. . . . Six out of seven planes used by the airlines of the world are produced in the United States.

**SEALED-BEAM** headlights designed to greatly increase visibility, especially in rain, snow, fog and dust, introduced by General Electric. In high-beam the "All Weather" headlights gives 25% more light, enabling the driver to see 100 feet farther. The low-beam produces 23% more light and directs twice as much light down the right side of the road.

**HOME BUILDERS** can now get complete book of plans, photographs and instructions for the construction of the all-metal CAA Certificated Honey-Bee lightplane. Price of the book is \$35, obtainable from Bee Aviation Associates, Inc., 1536 Mississippi St., San Diego 9, Calif. . . . Atomic Energy Commission approved a proposal by the Bethlehem Steel Company's Shipbuilding Division to study the application of nuclear power to commercial ship propulsion. . . . Average aircraft worker in the United States earns \$726 more per year than the average U.S. manufacturing employee. . . . Taylorcraft in production of Fibreglas covered lightplane. The plastic is used as outer skin for wing and fuselage, as well as for seats, doors, tank and pants.



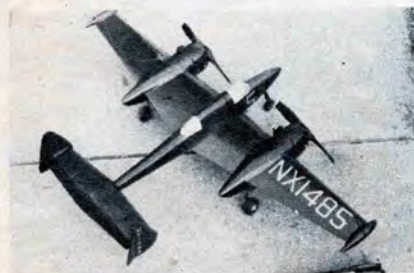


## "My Favorite Model"®



**Original Recon Plane**  
Says Edward De Coste

"I designed and built this model to resemble a light bomber or reconnaissance plane," says Ed De Coste of Providence, R. I. "It is U-controlled and flies nicely on one or two of the Arden .099's with which it is powered. Because of the wheels, I use only the paved surface of a tennis court for flying area. The wing-tip tanks of the model are truly functional. The left one is for the control-line leads, while the right is filled with lead. Fuselage and engine nacelles are made of carved, hollowed balsa blocks. Wings are formed from half-inch balsa plank and have a total span of 30 inches. The sportscar seen in one of the photos is also of my own design."



### WIN \$25.00 WITH YOUR FAVORITE MODEL

Send photo(s) of yourself & model plus details to "My Favorite Model" contest c/o Air Trails HOBBIES For Young Men.

FEBRUARY, 1955

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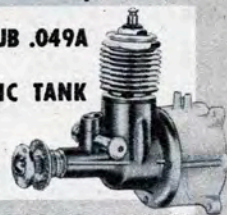


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NEW "OK" CUB .049A WITH PLASTIC TANK



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Powerful, fast, you're in for hours of fun and excitement. Complete with the New "OK" Cub .049A Engine with Plastic Tank. Complete with easy guide control handle and Dacron control lines. **\$7.50**

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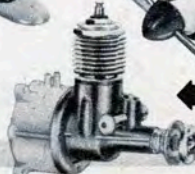


P-40 WAR HAWK



F-51 MUSTANG

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"OK" CUB .049A

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## MODEL AIRCRAFT MINEOLA, NEW YORK

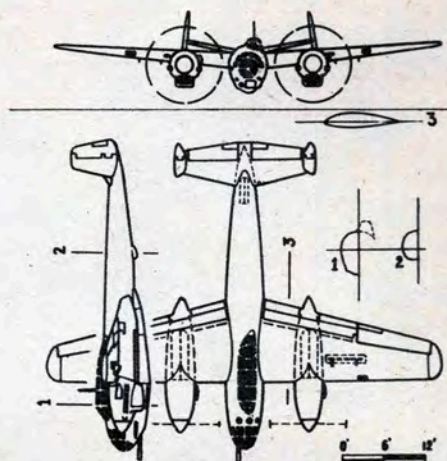
If no local dealer is convenient, mail orders will be filled by Enterprise Model Aircraft Dept. T12, Mineola, N. Y. Please include 25c packing and postage.



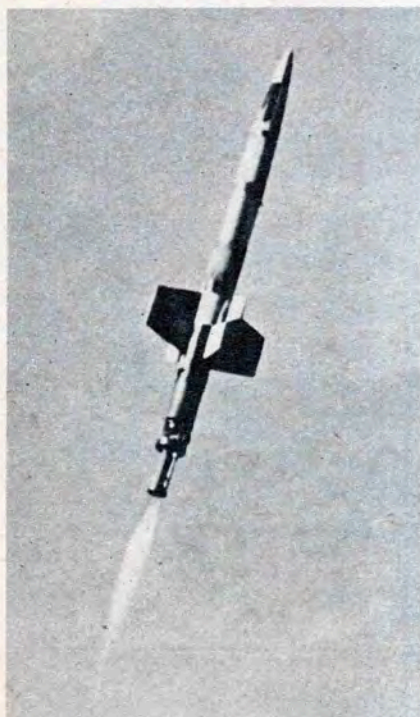
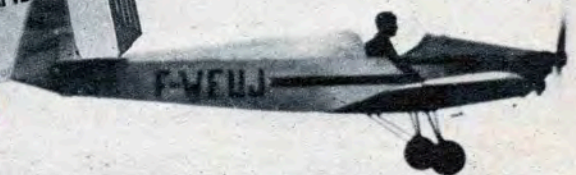


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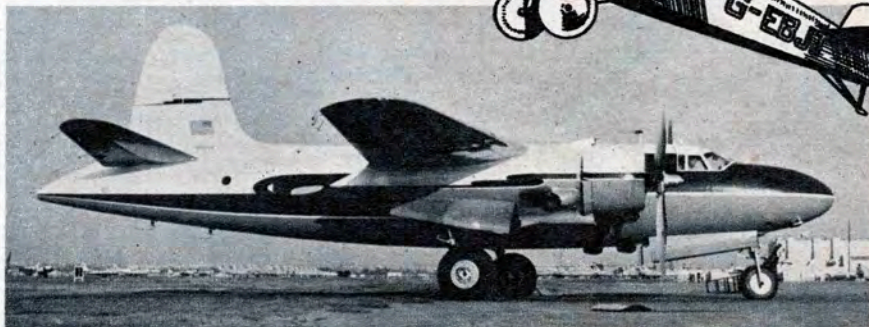
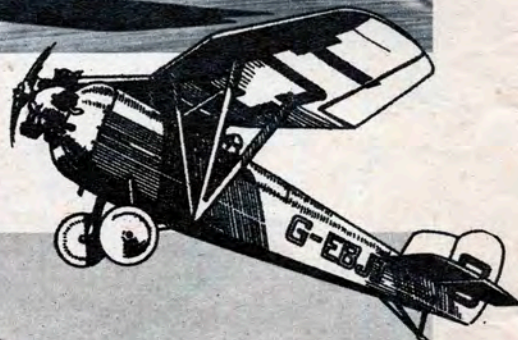
Recognize this craft? It's but one of many three-views to be found in the 1954/1955 "AP" by Bjorn Karlstrom, the well-known draftsman. The aircraft below is a popular "home-built" powered by a 36 hp engine, does 70 mph.



Are you "up" on your pilotless "birds"? You'll prize the special section devoted to "The Era of the Guided Missile" in this latest Air Progress. Special photos, reports, data charts on missiles from many countries. The inside story!



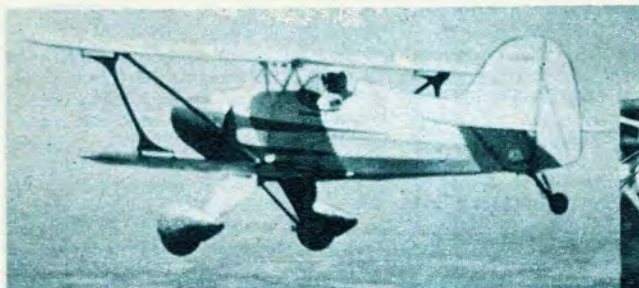
This Spad XIII C-1 has been faithfully restored by one of America's most famous pilots; read about it and many other "old-timers" which are still flying today. Can you identify that sportplane at the right? It's one of many fine scale sketches by the air artist Douglas Rolfe which you will find in the new Air Progress. How that man can draw planes! Something familiar about that ship below? You'll find it and its World War II counterpart in the absorbing photo collection "From Dog Tags to Glad Rags."





Acclaimed by air-fans from coast to coast! Best "buy" yet!

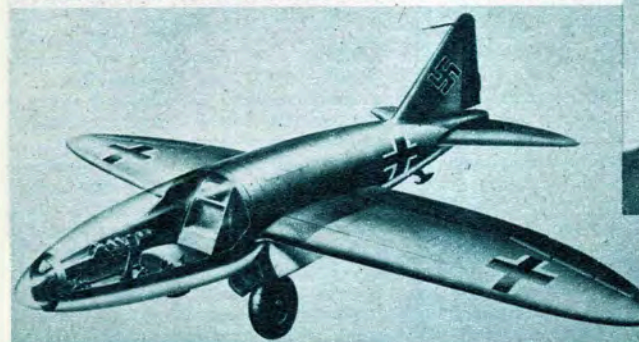
# Air Progress *by far!*



Isn't this a little beauty? She's described along with many other lightplanes in "Experimental Aircraft Association"; included are CAA regs on home-builts.



Recognize this attractive young lady, a famous aerobatic pilot? Can you identify that 'copter? See "Whirly Birds the World Over." One of the prize photos in the 54/55 Air Progress collection is the Heinkel He 176 rocket job (below), just one of "The Incredible Aircraft of the German Luftwaffe!" You won't want to miss this.



Why was this man's contribution to the helicopter so significant? His 'copter weighed 3,600 lbs., had 200 hp engine ... in 1920!



He's called the father of the aeroplane; he constructed a "mountain" to prove that man could fly. In "AP" Harry Harper tells the wonderful story of Otto Lilienthal.

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The amazing reception given to this latest "Air Progress" is best exemplified by the hundreds of enthusiastic letters received by the editors soon after the 1954/1955 edition hit newsstands across the country. "Where did you ever unearth those first-time-published photos of secret Nazi aircraft?" "Thank heavens for the wonderful job you did on the early development of the helicopter; I've been waiting years for someone to tell the true story!" "Where can I get plans of those home-builts you show?" Comments like those are the best indication of how very valuable and informative readers find this latest "AP." Order your copy now! Order one for that air-fan in the family—or friend in the service!



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SEE MORE GYRO SPECIALS PAGE 92

# GYRO

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NEW! Submini. CLOSED CIRCUIT JACK & PLUG... .35  
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Install in your case with tubes & crystal... 15.50  
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Low Cost PROPORTIONAL CONTROL added to any  
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COMPLETE KIT of parts & diagrams for  
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Complete with long life RK-61 & XFG... 9.45  
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MILLER or SIMPLE SINGLE with OSR type... 4.45  
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MILLER, \$6.95; SIMPLE SINGLE... 9.50  
JOHNSON 3 Tube, with SUB-QUENCH CHOKE... 13.85  
Complete with 2 pots. & wound coils, add... 5.50  
ABOVE KITS wired & tested, ready to operate, add  
TRANSMITTER & RECEIVER KIT—Parts and  
diagrams (less tubes & crystal) to build fa-  
mous MAC II Transmitter Unit and LORENZ

RECEIVER, with 10,000 ohm relay... 9.50  
NEW SIGMA 23A Relay... 9.50  
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cate 3 channel control... 3.95  
CAMERON COMPOUND, \$8.95; CAM. 2-Pot... 14.95  
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Screwdriver, Toy Electric Motor Kit or Voltmeter  
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(Continued from page 79)

the plane; presumably, separate antennas  
are used. Paul has since combined the  
two receivers into one unit and we hope  
to give circuit details and dope on the  
transmitter switching system he uses, in  
a later issue.

**General News.** Ever feel the need for  
a simple type of "contest" at R/C pic-  
nics, or just the regular fly-for-fun ses-  
sions? Try attaching a dollar bill to a  
3 ft. length of thin balsa, and setting up  
this prize in the center of the landing  
area; first one who hits the stick takes  
the buck! It won't cost as much as you  
think, either; we saw the idea tried out  
at the Selinsgrove R/C Meeting last  
summer, but even though the stick was  
up for hours, and a lot of real hot pilots  
were gunning for it, donater Harold de-  
Bolt still had his money when flying was  
over for the day. Though most flyers  
shoot for the stick when landing, it's con-  
sidered cricket to try power-on passes at  
it—if your control system and nerves are  
good enough!

Dean Flower (35390 Churchill St.,  
Richmond, Mich.) expects to install a  
Babcock 3-channel outfit in 9 ft. Custom  
Cavalier, and will power the plane with a  
2-speed Fox .59. He also hopes to put  
on twin rudders, and the wing will be  
fitted with slots. Dean likes 'em big, since  
he can then load the planes with heavy  
batteries and multi-controls, and still  
have a reasonable flying speed. He flew  
his second RudderBug during the 1954  
season, fitted with Babcock single-chan-  
nel equipment and deBolt Multi-Servo;  
latter worked to perfection after he had  
mastered the correct keying rhythm.

**R/C in Japan** is described in a letter  
from T/Sgt. Lincoln G. Beal (AF  
39479707, 35th Supply Sqdn., Box 177,  
APO 994 c/o Post Master San Francisco,  
Calif.). Sgt. Beal says there are eight  
R/C planes flying or being built at John-  
son Air Base, and their club, the "John-  
son Skyhawks," has 15 members. He is  
flying a Beam with ECC radio equipment  
and Bonner Compound, and notes that  
most of the R/C builders in the club are  
control-line or F/F converts. He expects  
soon to be 100% R/C, as he feels it  
combines the most interesting phases of  
both F/F and U/C flying, with a few  
added problems all its own. Other R/C  
enthusiasts at the base are A/1c Vince  
Chimera (who was a member of the Air  
Force Team at the 1954 Nats), A/1c Vic  
Burger and Lt. Al Davis. All sorts of  
planes and equipment are in use, from  
little Beams and Trainers up to a Super  
Buccaneer; they use both 27 and 465 mc.  
equipment, and utilize escapement and  
proportional control. Sgt. Beal described  
a flyaway, when the plane, which was  
seen to land in a large clump of woods,  
could not be found; after a fruitless  
search he suddenly thought of keying the  
hand-held transmitter, and sure enough—  
it was a cinch to follow the buzzing Bon-  
ner Compound escapement and retrieve the  
plane.

Bob McDonald (Carthage, Mo.)  
writes that the owner of the local airport,  
where the R/C boys fly, has been bitten  
by the bug and will soon have his own  
plane in operation—a very desirable sit-  
uation. Bob has joined Fred Horner in  
forming H & M Radio Controls, a con-  
cern specializing in R/C parts and equip-  
ment.

**R/C Movies.** Many R/C clubs and groups  
have movies of their activities that they  
are willing to loan to other responsible  
groups. Vic Weissbrodt, Pres. of the Mil-  
waukee Flying Electrons (2100 E. Web-  
ster Pl., Milwaukee 11, Wis.) has such

a film, of 1951 and 1954 Nats and other  
contest flying, that he offers to interested  
parties, and he would like to borrow films  
from other clubs. Vic says that he lost  
his Buzzer'd due to weak batteries about  
the middle of April in 1954; six months  
later, he suggested that one of his fellow-  
workers, who was not too busy, take the  
afternoon off and search again for the  
plane. Friend was provided with a rough  
map of the woods over which the plane  
was last seen; two hours later, same  
friend came in with the Buzzer'd—slight-  
ly weathered, but in perfect shape!

Vic took top place in an R/C contest  
held Sept. 26 by the Waukesha Wing-  
men; day was very windy, but his com-  
bination of a Buzzer'd with a Live Wire  
Senior wing, and fitted with K&B .23, did  
the job. The fabulous 20 ft. span "model"  
plane that was under construction by a  
member of the Flying Electrons was  
"willed" to Vic by the owner; plane had  
a Briggs & Stratton 2 1/2 hp washing  
machine engine in it and weighed 145 lbs.  
Vic has removed this engine and fitted  
a 7 1/2 hp target drone mill; he has also  
lightened up the ship considerably, and  
hopes for some good flights.

Feeling that a lot can be learned about  
R/C plane control problems and reac-  
tions, Dale Root (6036 Telegraph Ave.,  
Oakland 9, Calif.) has dusted off his fa-  
vorite U/C plane and will undertake a  
close study of elevator travel required for  
various maneuvers, on the theory that it  
will help do similar stunts at low alti-  
tude with his R/C planes. Dale has tem-  
porarily retired the neat shoulder-wing  
R/C job, pictures of which appeared in  
this column a few months ago; while it  
was a good flyer, he found it too big for  
single-channel work and a little too small  
for multi-control equipment.

He will enlarge the wing to 720 sq. in.,  
put the Babcock BCR-4 receiver back in,  
and hopes to achieve a wing loading of  
about 17 oz. per square foot—which  
should make it a hot and maneuverable  
plane, but not a "bomb." Dale finally got  
his "Little Freq." cooking at the Crow's  
Landing R/C meet and racked up 128  
points, 74 of them in stunt; he even did  
a touch-and-go by spiraling down with  
the engine wide open, then reversing  
rudder to just touch the deck—we don't  
recommend this as standard procedure  
and neither does Dale! His club has  
many interesting planes under construc-  
tion, one of the most unusual being an  
enlarged version of the "Space Ship,"  
which will be powered with a Cub .14,  
and carry an ECE receiver. Quite a few  
boats are in operation, too, and while  
most of the boys still prefer planes, they  
operate the boats for "relaxation," and  
are very proud of the craftsmanship put  
into them.

**Commercial Section.** By the time this  
is printed our R/C volume, "Radio Con-  
trol Handbook," will be published and  
distributed (at long last!). Can be had at  
most large hobby shops, at many radio  
stores, or from Hobby Helpers (770  
Hunts Points Ave., New York 59, N. Y.)  
for \$2.25. Hope it will help you toward  
better R/C building and operation. Hob-  
by Helpers has new 50¢ R/C book—  
Collection #2 of R/C article reprints  
from ATH, called "Application of Radio  
Control."

H & M Radio Controls (619 East Bud-  
long St., Carthage, Mo.) will now mar-  
ket the McDonald S1 single hard tube  
receiver for \$14.95, with tube and relay,  
or for \$9.95 less relay. A new model, the  
S-1 has same circuit and components, but  
is mounted in an aluminum case; it  
weighs 3 oz., measures 2 1/8" x 1 3/4" x  
1 3/8" deep, and just the top of the tube  
(Continued on page 89)



## Hobby Club Emblems



Glow Bugs  
Medina, Ohio

President of the club is George Bolton, W. Elmwood St., Medina.



Joliet Airplane Model Club  
Joliet, Ill.

Club organized two years ago, has at present 55 members; 25 are members of AMA, a number of others have their application for license in. Organization is sponsored by Joliet Park District. Fly at local airport. Treasurer: J. W. Brown, 1512 Jones St., Joliet.



San Francisco Vultures  
San Francisco, Calif.

Holding an AMA charter, this club is one of the oldtimers, having originated from several squadrons of the Junior Birdmen of America back in the Lindbergh days. Many of its members held impressive records, both indoor and control line. Club at present has 60 members, still growing. Its success is based on accepting youngsters as members and giving them proper guidance. Meets every Thursday night.

Send your club insignia—with info on your group. ATH will pay \$10 for each emblem and report used here. Type data and send only printed emblems—no sketches.

## NEW MODEL RR-5 RECEIVER

Dependable 5-Channel resonant reed receiver. Engineered for simple tuning, low current drain and high sensitivity, weighs 8½ oz., size 4⅞x2⅞x1½ inches. Complete, fully assembled in attractive grey hammertone case.

Price ..... only \$109.50



## NEW MODEL TR-5 TRANSMITTER

Powerful—5-Channel tone modulated transmitter engineered for high output, stability, and requires no tuning. Weighs 4½ lbs., size 3x5x10 inches. Complete, fully assembled in grey hammertone case. Price ..... only \$79.50 less batteries.

TI-5 Installation Kit—contains necessary components to hook up receiver and servos. Price ..... \$3.50



Write TODAY for additional information.

**RA-CON ENGINEERING CO.**

8556 Firestone Blvd.

Downey, California

### AIRCRAFT OF THE 1914-1918 WAR



Edited by H. G. THOMPSON. Foreword by R. A. BARNES.  
Illustrated by H. A. BARNES.  
THIS IS A "HARBOROUGH" PUBLICATION

### "AIRCRAFT OF THE 1914-1918 WAR" 10 DAY FREE TRIAL

Contains 234 large 11 x 8 3/4 pages, of over 200 World War I Aircraft. 80 full page 1/72" scale plans. Hundreds of clear photos show complete insignia & Squadron markings. 14 photos of squadron line ups. Every country's aircraft shown—British, Italian, German, Belgian, etc. Full details of weight, power plant, armament & other engineering details. Plus "History" of each plane. Further 94 photos give Rare & Experimental types. Book is invaluable to Solid Model builders & to Detailed Museum Type builders. This is a collectors item, a masterpiece of exact detail and engineering info. Book weighs almost 2 pounds. It's sold on a 100 per cent money back guarantee. Send the price of \$11.95 today (shipped prepaid), keep it 10 days. If not satisfied, return it and we give full purchase price refund.

CLOTH BOUND - - - - - Price \$11.95 ( )

8 page two color descriptive circular on above.....25c ( )

### PIRELLI RUBBER

1/4"—270 ft. per hank.....\$4.98 ( )  
3/16"—270 ft. per hank..... 3.98 ( )  
Trial 40 ft. hank of 1/4".....1.00 ( )

### RADIO BOOKS

Radio Control of Models.....\$2.50 ( )  
Radio Control of Model Aircraft.....3.98 ( )  
Radio Control of Ships, Boats and Aircraft.....3.98 ( )

Gull Model Airplane Co., 10 E. Overlea Ave. Dept. A Baltimore 6, Maryland



FOR ALL ENGINES to .049  
WINGSPAN—16 inches

"VITAMIN 1/2A" is THE model for the tiny engines. A real thoroughbred in every detail. Perfection in design—and completely PRE-FABRICATED in the MONARCH manner. De Luxe in content—with stamped metal MONO-STRUT, decals, etc. An unusually beautiful model, and a great performer.

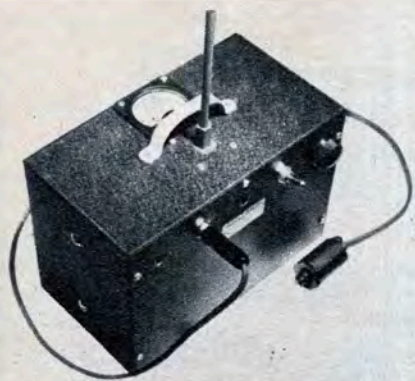
at your dealer  
by mail add 25¢

MONARCH MODEL AIRCRAFT CO., Inc.  
Brooklyn 33, N. Y.









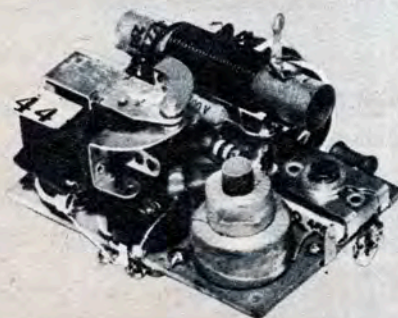
openings to reach the filling hole of the cell, and to observe the built-in hydrometer—the latter serving, of course, to show how much charge is in the cell.

Charging of the cell is made easy, by the inclusion in the case of two separate charging systems. Both are reached by making connections to the 6-prong charging socket on the rear of the case. When the 110 V. charging lead is inserted in this socket, it makes connections to transformer T, while the other charging lead allows use of a 6 V. storage battery for charging. Power for heating glow plugs may also be obtained from this socket; some plugs can take only 1.5 V., and 1 and 3 will supply this. If you want the full two volts, connect to 5 and 3.

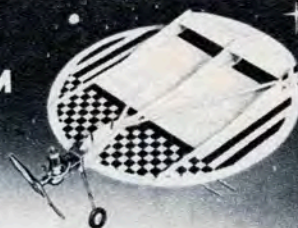
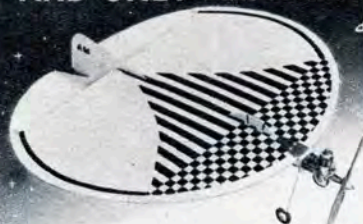
Another feature of this transmitter is the metering circuit, basis of which is a high grade 5 ma. meter. When the meter switch is in the position shown on the diagram, the meter is connected as a 50 ma. unit, to measure the transmitter plate current. In the left position, the meter is entirely disconnected from the transmitter, and by connecting to the proper terminals of the meter socket, can be used as a 0-5 V. meter (terms. 1 & 2), 0-50 V. (1 & 8), 0-250 V. (1 & 4), or a 0-5 ma. meter (1 & 5). In the right hand position the meter switch allows checking the high voltage of the transmitter power supply, with a scale range of 0-250 V.

This transmitter is available only as a finished and tested unit, although the RF unit may be had separately in kit or finished form. The outfit is complete, with storage cell, crystal and tubes, antenna, snap-action key on 8' cord, and 110 V. and 6 V. charging cables.

**Transmitter Specifications:** Model RCX HP II, using two 3D6 tubes and Petersen Z9A crystal. Case size less projections, 5 x 6 x 9". Toggle switch for power ON-OFF, jack for key plug, 3-position rotary switch for meter, 3-section screw-together antenna is 9½" long, 38" long when taken apart. Tuned antenna coupling allows proper loading on all sorts of surfaces. Built-in chargers for 110 V. AC or 6 V. (Continued on page 89)



## Flying Saucers are REAL! AND ONLY AMCRAFT HAS THEM



These planes are OUT OF THIS WORLD!

Be the first in your group to fly one!

**VENUS** Outstanding ½A free flight model. Its tremendous wing area (277 sq. in.) enables it to climb faster, soar longer. (.035-.074 engine) ..... **\$2.50**

**JUPITER** Unique ½A control line model with 15" diameter wing. Flies inverted, performs all maneuvers, instant response. (.049-.09 engine) ..... **\$2.50**

**The JETSTER** Finest of all trainers. Solid wing, symmetrical airfoil. Rugged. Flies inverted. .19-.29 engine ..... **\$3.50**

**The WOODCHOPPER** Outstanding stunt-combat model. Perfectly symmetrical, maximum lift, highly maneuverable. .19-.35 engine ..... **\$2.95**

# Amcraft

If unobtainable from your dealer order direct adding 25c postage and handling.

2 BARRINGER AVENUE, SCHENECTADY, NEW YORK

## LATEST "CUSTOM MIDGET" RADIO

CUSTOM  
RECEIVER



RELAY  
INCLUDED

CUSTOM  
TRANSMITTER  
BOX INCLUDED



ALL THREE  
\$9.98

RECEIVER TUBE "IDLES" WHILE RELAY REMAINS IN UNENERGIZED STATE. (saving tube and battery)

TUBE CURRENT INCREASES and RELAY BECOMES ENERGIZED ONLY WHEN TRANSMITTER IS KEYED

SHOULD RECEIVER or TRANSMITTER FAIL WHILE IN USE MODEL COMES IN RATHER THAN FLYING OUT OF SIGHT (This new type of "Fail Safe" operation fully explained in our instructions)

Full Re-Designed "CUSTOM RECEIVER" weight under 3 ounces including 10,000 ohm relay (relay included) plus Silver Ceramic Trimmer, midjet resistor & condensers, Nylon Coat Coil wire etc. in kit. Uses one X F G I tube which IDLES while relay not energized saving tubes life, batteries etc. "CUSTOM TRANSMITTER" 27 M C Exam Free Band kit with pre drilled base etc. Transmitter Box only 4½"x3½" (Box Included) may be hand held or placed on Field. Properly constructed has 1 mile or more range. Full drawings and instructions included. Parts for "CUSTOM ACTUATOR" furnished. Magnetic Principal, uses battery supply alone, no rubber power used. Operates both rudder and elevators or rudder alone for Aircraft Boats or Cars, weight under ½ ounce. Less tubes, batteries, keying lead, antenna, receiver var. resistor, crystal.

"CUSTOM MIDGET" RECEIVER TRANSMITTER and ACTUATOR ..... **\$9.98** ☐

Also Available "STANDARD MIDGET I" type kit, this group of 3 units, same design as above, same Relay, Same type Transmitter and Actuator. The difference from above is the Receiver weight which is greater (slightly over 4 ounces) Heavier components used.

"STANDARD MIDGET I" RECEIVER TRANSMITTER and ACTUATOR ..... **\$6.98** ☐

PLANS FOR THE "CUSTOM MIDGET" all three units... 50c ☐

**BOOKS** "RADIO CONTROL OF MODEL AIRCRAFT" \$3.98 ☐  
"RADIO CONTROL OF MODELS" 2.50 ☐  
"RADIO CONTROL SHIPS, BOATS, AIRCRAFT" 3.98 ☐

### MODELLERS ORDER DIRECT

"SPECIAL 10 FOOT TRANSMITTER AERIAL" ..... \$1.00 ☐  
X F G I tube ..... \$3.50 ☐  
3-A-4 tube ..... 1.00 ☐  
3-A-5 tube ..... 1.35 ☐  
Keying Switch ..... .50 ☐  
Micro Switch ..... .98 ☐  
Photo Elec. Cell ..... .98 ☐  
Variable Resistor ..... .50 ☐  
0 to 3 Millimeter ..... \$3.50 ☐  
0 to 50 Millimeter ..... 2.75 ☐  
Both Meters above ..... 5.25 ☐  
Peterson 27.255 M C ..... 4.85 ☐  
Z-9 Crystal ..... .50 ☐  
Rosin Core Solder, Kesters 3 ounce box ..... .50 ☐

### DEALERS WRITE FOR PRICES

SPECIAL 10,000 OHM SIGMA RELAY ..... \$2.98 ☐  
Soldering Iron ..... \$2.98 ☐  
Battery Tester, reads 0 to 2 Volts and 0 to 50 volts ..... 2.98 ☐  
Electric Motor 6 volt for Boats 2 to 4 Ft. \$8.50 value ..... 3.88 ☐  
Black Crackle Finish Transmitter Cases 4" x 5" x 3" ..... \$2.98 ☐  
6" x 5" x 4" ..... 3.25 ☐  
6" x 6" x 6" ..... 3.50 ☐  
10" x 8" x 7" ..... 3.98 ☐  
Neon Bulbs 15 for 1.00 ☐

**25c** ☐ NEW and FULLY REVISED Radio catalogue. Shows parts as low as ¼ to ½ the price you normally pay. Also gives more details, more photos etc. of our kits. .... **25c** ☐

MODELLERS—Check off each item you wish to order above. PRINT YOUR NAME AND ADDRESS on a separate sheet of paper with above order. Send REMITTANCE IN FULL.

**RADIOMODELS, BOX 36, DEPT. A BALTIMORE 6, MARYLAND**

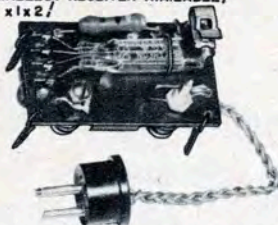


THE NEW  
1955

# CONTROLAIRE SM-1 27 MC RECEIVER

DESIGNED & MFG BY THE  
WINNER OF THE '53 NATIONALS  
R-C EVENT: JACK PORT, OF AGE  
MODEL SUPPLY, FAIRBORN, OHIO

SMALLEST RECEIVER AVAILABLE/  
1x1x2/



BEST PERFORMANCE OF ANY SINGLE  
HARD TUBER. AT LEAST 1.5 MA CURRENT  
CHANGE WITH 8K RELAY ON 45 V! 8K  
RELAY AND/OR 60 V. FOR MORE CHANGE!

TESTED & APPROVED BY US IN  
6 MOS. OF FLYING IN SUMMER & WINTER!  
NO ADJUSTMENTS REQUIRED TO DATE!!!

LONG LIFE IAG4 TUBE RATED AT  
1000 HRS. FILAMENT DRAIN ONLY 35 MA.  
MAY BE IDLED UP TO 3 MA & CURRENT!

NOT A KIT! ASSEMBLED &  
READY TO OPERATE  
INCLUDING TUBE, LESS RELAY 11.95!

NEW 1955 CATALOG-IT'S FREE!  
SPECIAL 220 MC PRICE LIST FOR  
EQUIPMENT IN THIS ISSUE

CONTROL RESEARCH  
BOX 9 HAMPTON, VIRGINIA



more flying time

with the new

## "Time-Saver" SERIES

NOW AT YOUR DEALER

"Spirit of St. Louis" prototype

\$2.95

add 25c per kit by mail

### MASTER MODEL CRAFT

727 Westchester Ave. • New York 55, N. Y.

## TalmCo/ELMER Automatic M.I.

The only constant speed, full feathering prop.  
with variable pitch settings and blades that  
may be quickly replaced, is immediately avail-  
able for all Fox, Forster, K&B, McCoy and Veco  
engines of .35 cu. in. dis. or less. Perfect for  
multi-engine installation. Complete propeller with  
installation and operation data, only \$5.35 each—

Replacement blades, tough plastic, only .75 each—  
(specify engine make and displacement)

TalmCo/ELMER Automatics will be at the big meets in 1955

### microvonic proportional control box for R/C

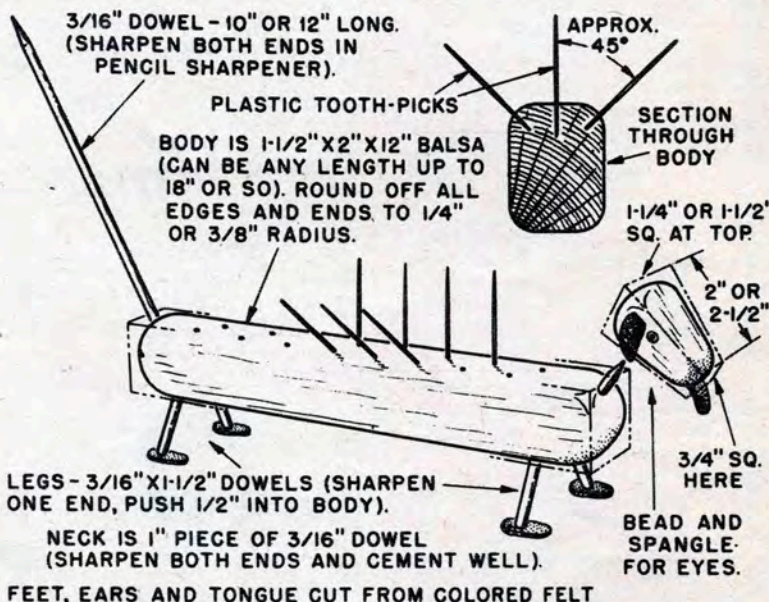
Styled after McEntee's MAG-MEGM Pulser, but with Wilson  
motor, nylon cams, adjustable contact tension. One year p/s  
guarantee. Available after Feb. 15, '55. Free Mactuator with  
all orders before 2-10-55. Complete: not a kit \$19.25 each

TALMCO MICROVONICS

Post Office Box 125,  
Oakland Gardens Sta., Flushing L.I., New York  
No C.O.D. orders can be accepted

# DACHSHUND SNACK SERVER

Here's a simple project, yet one that will be  
welcomed as a gift; can be club money maker



## 220 mc Rcvr

(Continued from page 53)

R3. When the modulation is switched  
off, the current should jump instantly to  
about 3 ma.

**Mounting.** Holes are shown in the  
four corners of the receiver base for the  
conventional rubber band suspension. Be  
sure to provide a clearance of at least  
3/4" on all sides of L1. The receiving  
antenna is not at all critical; a 12"  
length of music wire will do nicely.

In a subsequent issue we will present  
the "220" transmitter.

### Parts List

All resistors except R3 are 1/2 W. carbon:  
R1-R2—1.5 meg., R3—5 meg. Centralab No.  
B16-128 miniature variable; two 1 meg., one  
4700, two 2.2 meg., one 20 meg., one 5 meg.,  
one 75,000. CL—3 mmf., Johnson Type 3MB11,  
C2—30 mmf., C3-C8-C11—.002 mf., C4-C12—  
5 mf. electrolytic Aerovox SRE 150 V., C5-  
C13—50 mmf., C6—500 mmf., C7-C10—.005  
mf., C9—.05 mf. C-D Type ZNW 150; C2, C5,  
C6, C13 are Erie Ceramicon GP; C3, C8, C11  
are Erie Type 801; C7 and C10 are Erie Type  
811. L1—see text, L2—43 henry hearing aid  
choke (Stancor type HH100). RFC1—1 meg.

1/2 W. carbon resistor wound full of #32 en.  
wire, RFC2, RFC3-RFC4—1 microhenry National  
type R-33. 15 flea clips, eyelets, hard-  
ware, etc.

## Atwood Inboard

(Continued from page 74)

ures, that of priming directly into the  
exhaust ports or choking at the intake  
tube, priming was much the faster.

While bench running, even though air-  
cooled it is not recommended that the  
engine be operated for long periods with-  
out circulating air around it. This is easi-  
ly accomplished through use of an elec-  
tric fan or by attaching a 6" dia. metal  
propeller to the front of the flywheel.

Running free in the test stand, our test  
engine turned up a steady 20,000 rpm.  
Direction of rotation is counter-clockwise  
and is clearly indicated by an arrow  
stamped on the front of the flywheel. Re-  
member when purchasing a water pro-  
peller (nautical term: screw), a left-hand  
one is required.



**Featured in the 1955  
Air Trails Model Annual**

- Directory of R/C Plane Kits
- Directory of R/C Accessories
- Three Operations on Single Control

(Continued from page 84)

projects from case. S-1B sells for \$16.95 with tube and relay, or \$11.95 less relay. Concern will convert any S-1 receiver to S-1B model for \$3.

Gyro Electronics Co. (325 Canal St., New York 13, N. Y.) offers new transmitter, the deluxe model ZT, which will provide audio tone or straight CW transmission, has built-in battery charger, Gyro-Magic tuning indicator, 2 volt power supply. Unit comes complete with all accessories, such as key and lead, tubes, antenna, battery, etc., for \$48.95. Write for your free copy of 16 page R/C catalog. Gyro Audiotone modulator, mentioned in this column last month, has been reduced in price to \$7.95 ready to use, and kit now sells for \$3.95.

We have heard from several sources that the model Porsche car, which contains the extremely efficient motor we described here several months back, may now be had at Kresge chain stores for \$3.98.

Electronic Specialty Supply Co. (58 Walker St., New York 13, N. Y.) will soon have a sub-miniature single audio tone receiver along lines of the WAG. They suggest use of type PL-68 plug and jack to connect keying lead to transmitter; jack does not have to be insulated from chassis, and you can't get a "bite" from it.

Line of miniature electro-magnetic clutches is made by Electronic Manufacturing Engineers Co. (2410 Beacon St., Seattle 44, Wash.) in three types. May be had in style for bevel gear drive, for pulley and cable use, or for direct line drive in a shaft. They are made with windings for use on voltages from 3 to 28, are about 1" in diameter and weigh 1 oz. Average cost is about \$5, and clutches should be useful in R/C, as current drains are not excessive, and they will transmit considerable torque.

Those who wish to experiment with tuned audio filters in either receivers or transmitters may now obtain the exact same units that are used in the BCR-4 receiver and BCT-4 transmitter made by Babcock Radio Engineering, Inc. (Box 3097, Van Nuys, Calif.). The buyer should specify whether the filters are for transmitter or receiver use; each filter unit contains components tuned for three audio tones and sealed in a metal case. Price is \$27.00 for either style.

Second of a series of kits for scale model planes intended especially for R/C, and produced by Sterling Models (1530 N. Hancock St., Phila. 22, Pa.) is the Cessna 180. Designed for Half-A and A engines, the plane is of 45" span. Kit contains stamped steel engine cowl, spring steel landing gear, and extensive use of plywood assures that model will be rugged. All wood parts are die-cut, of course, and double-sided 35 x 45" plans include data for free flight and control line, as well as R/C flying. Kit will sell for \$5.95 and is Sterling No. FS-2.

# INTRODUCING THE New F-B BASIC TRAINER

*It's Neat!*

THE BASIC TRAINER has aluminum landing gear, complete hardware (pre-fab—only 7 parts to bolt and glue together), ready to fly in an hour; for engines .14 thru .35. Class A-B & C. Sells for... \$2.95

By mail  
add 25c



*F-B Planes give the beginner or experienced model builder a chance to get real enjoyment out of the most exciting modern pastime.*

**HAVE SANTA ORDER A BASIC TRAINER OR ONE OF THESE OTHER F&B WINNERS FOR YOUR CHRISTMAS STOCKING!**

Chevrolet Corvett  
Jeep Station Wagon  
Chrysler Imperial Sedan  
Jaguar XK120  
Nash Rambler Convertible

Stinger Stunter  
P-T Trainer  
Viking  
Folly 1/2A  
Combat Sky Box

Sharpy Stunt Plane  
Vampire  
Vixen Stunt Ship  
P40F Warhawk  
F & B Hinges

**F-B MODEL AIRCRAFT — 3240 LARIMER — DENVER 5, COLO.**

## SHOP WHERE YOU SEE THIS SIGN



DEALERS: If you want this decal for your door, write

**MODEL & HOBBY INDUSTRY**

30 E. 29 St. New York 16, N. Y.

## C-122 Avitruc

(Continued from page 32)

first so it will quit first and keep the ship flying toward the outside of the circle. Fuel cutoffs are very desirable on twin-engine models. Thirty-five to 50 ft. lines may be used. The C-122C flies nice and has a fast glide, so be ready to set her down when the engines sputter.

### Bill of Materials

5 sheets 3/32" x 3" x 36" balsa, fuse sides and ribs.  
3 sheets 1/16" x 3" x 36" balsa, wing covering, 1 sheet 3/8" x 3" x 18" balsa, stab and elevators, 1 sheet 1/2" x 3" x 18" balsa, fin and rudder, 6 strips 3/8" x 3/8" x 36" balsa, bulkheads, 4 strips 3/16" sq. balsa, fuselage longerons.  
One strip 3/16" x 1" x 36" balsa, wing spar, 1 block 2" x 2" x 20" balsa, nacelles and nose blk, 1 strip 1/4" x 1/2" balsa, wing leading edge, 2 1 1/2" Veco wheels.  
2 3/4" Veco wheels, 1 pc. 1/16" and 3/32" music wire, pushrod and front L.G. 1 pc. 3/32" music wire, main L.G. 1 3/4" Veco bellcrank, 2 small Veco control horns, 1 sheet 3/32" plywood, B/C mount, 1 sheet 1/4" plywood, firewalls.

## BUILD & FLY YOUR OWN AIRPLANE (Flying Flea)



This airplane cannot spin or stall, it is the safest, most original airplane to fly.

**Specifications:** Wingspan 18 ft. Take-off 150 feet. Cruising speed 85 mph. Engine 45 to 65 HP. Total weight 520 lbs. Wood construction, fabric covered.

Latest construction blueprints, instruction sheets and photos **\$8.50**  
Blueprint showing all ribs and special hardware FULL SIZE \$1.50 additional.

## THE NORWOOD COMPANY

P.O. Box 222B • Hawthorne, New Jersey

## Essco Rcvr & Xtmr

(Continued from page 87)

DC. Meter may be used for checking external circuits (or transmitter). At maximum loading, transmitter runs at 30 ma. and 160 V., or 4.8 W. Weight less antenna—13 lbs.

**Receiver Specifications:** Model DHT; supplied with two MPC-1 tubes. Base size 2 1/2 x 1 3/4", overall height (including second base) 1 5/8". Weight with tubes and Kurman relay—2.9 oz. Screw adjustments for tuning and sensitivity, variable resistor to set second tube plate current. 6-lead power cable does not include relay contact connections. 20-24" ant. recom.  
**Battery Requirements** (using two MPC-1 tubes): A—two pencils in parallel—1.5 V at 80 ma. B—two 22 1/2 V. batteries (Eveready 412 or equiv.), not series connected. See text for current drains.



## VEST POCKET RADIO

Smaller than many hearing aids. Powerful, portable and can be assembled by anyone in one hour. Uses two inexpensive cells that fit within case. Owners report 1,500 mile reception. No antenna or ground required for local use. Complete kit of hearing-aid parts only \$2.99. Batteries extra at \$1.15. Use any regular headphone with Micro or tiny hearing-aid earset, shown in photo \$3.90. Micro is guaranteed to please or return in 10 days for full refund.



**\$2.99** POST-PAID

**Send Only \$1.00 Bal. C.O.D.**

Electronic Miniatures (AT) Manteo, No. Car.

## TIRED OF TRYING?



In addition to leading lines of Model Planes and Trains, TROST stocks many imported toys, Leather Handicraft, Woodworking, Bead and Shell craft, Woodburning, and many other kinds of hobbycraft. Dealers write for complete A to Z list.

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Modelcraft and Hobbies

3140 W. 63rd St. Chicago 29  
PLANES-TRAINS-SHIPS-PARTS-SUPPLIES

The Standard  
Of Quality

# Cavacraft

AUTHENTIC SOLID SCALE MODELS

PHILADELPHIA, PA.

**DARWIN DELUXE ALL METAL  
ADJUSTABLE CONTROL HANDLE**



NOW, no more need to have 2 or 3 handles. The Darwin all-metal all-span handle is versatile enough to fly 1/2 A, speed, sport or stunt at a span of your own selection. Easy adjusting mechanism locks secure and will not fray cable.

**\$1.25 each**

DARWIN MODEL AIRCRAFT COMPANY  
2430 Tremmel Avenue Ann Arbor, Michigan

## JCS Guide

(Continued from page 53)

\$600 scholarship (\$150 per year) that may be had by students ranking in the upper fifth.

Remember, these scholarships are being offered to any qualifying high school senior (ladies included) anywhere in the country, and are for the full four-year college course. This college, located at Elizabethtown, Pa. (southeast of Harrisburg), is a coed institution directed by the Church of the Brethren. It bestows A.B. and B.S. degrees in liberal arts, business administration, science, teaching and secretarial studies. Enrollment is around 200 men and half as many women. For information, write to Mr. Eby C. Espersshade, Director of Admissions, Elizabethtown College, Elizabethtown, Pa.

High Schoolers in New York State are eligible to reap the benefits of higher education in one of the most elaborate, progressive and least expensive setups of its kind in the land—the State University of New York. Comprising 27 units scattered all over the Empire State, plus 10 affiliated community colleges, it prepares you for anything from forestry to medicine, from teaching to technology. At most units tuition is free to state residents (out-of-state students pay \$300 per year). Exceptions, meaning you have to pay tuition, include the two colleges of medicine, the one liberal arts college, and the community colleges. At practically all the 27 units and the affiliated community colleges there are numerous scholarships available to residents.

Here is what you can study and where, the name in the parentheses being the location. At the College of Ceramics (Alfred), you can take ceramic engineering and technology etc., at Maritime College (Fort Shuyler) marine engineering or marine transportation. At Cornell University (Ithaca) you can enter the College of Forestry, School of Industrial and Labor Relations, College of Home Economics, College of Agriculture, or the Veterinary College. (Yes, these are all units of State U., and tuition free as described above.) To be an M.D.: State University Downstate Medical Center, College of Medicine (Brooklyn), and State University Upstate Medical Center, College of Medicine (Syracuse). To be a teacher: Teachers Colleges at Brockport, Cortland, Freedonia, Genesee, New Paltz, Oneonta, Oswego, Plattsburgh, and Potsdam, and Colleges for Teachers at Albany and Buffalo. At Harpur College (Endicott) you can get liberal arts and business administration.

These are the professional colleges, with a four-year course minimum. In addition, State University operates six two-year Agricultural and Technical Institutes that offer subjects in agriculture and various technologies, at these locations: Alfred (Diesel Technology etc.), Canton (Drafting and Design etc.), Delhi (Frozen Foods etc.) Farmingdale (Industrial Chemistry etc.), Morrisville (Electrical Technology etc.), and Institute of Agriculture and Home Economics at Cobleskill (Farm Equipment Sales and Service etc.).

Also part of State University are these two-year community colleges and technical institutes that are locally operated but supervised by State U.:

Auburn Community College (Auburn—Pre-Engineering etc.), Broome County Technical Institute (Binghamton—Automotive Technology etc.), Erie County Technical Institute (Buffalo—Construction Technology etc.), Fashion Institute of Technology (New York City—Textile Design etc.), Jamestown Community College (Jamestown—Pre-Medical etc.). Mo-

hawk Valley Technical Institute (Utica—Mechanical Technology etc.), Community College of Applied Arts and Sciences of the City of New York (Hotel Technology etc.), Orange County Community College (Middletown—Business Administration etc.), Troy Technical Institute (Troy—Air Conditioning and Heating Technology etc.), Westchester Community College (White Plains—Electrical Technology etc.).

All told, there are more than 200 different fields of study available at State University. For complete information on courses, write for the booklet titled "Summary Bulletin"—just address State University, Albany, N.Y.

Among the 3,204 State Scholarships awarded annually to qualified residents of the State, the Summary Bulletin lists the following that are applicable in State University and the affiliated community colleges:

I. State Scholarships pay the 1,654 winners \$350 cash annually for four years. This scholarship applies to the State University's teachers colleges, liberal arts college (Harpur), Maritime College, Colleges of Home Economics, Agriculture, Veterinary Medicine, and the School of Industrial and Labor Relations at Cornell; College of Forestry at Syracuse; College of Ceramics at Alfred; and the State University Institutes in programs registered by the Commissioner of Education.

II. State Scholarships for Children of Deceased or Disabled Veterans grant \$450 cash annually for four years. There are 100 of these scholarships and they are applicable at the same State University colleges listed in item I.

III. State War Service Scholarships for Veterans offer an amount up to \$350 a year toward tuition and fees for a period of four years for full or part-time study on the graduate or undergraduate level. There are 1200 such scholarships awarded each year, and they may be used in any unit of State University.

IV. State Scholarships for Professional Study in Medicine and Dentistry go to 100 persons and allow \$750 annually for no more than four years of professional study. This award may be used at the two State University medical colleges located at New York and Syracuse.

All New York State scholarships, including those above applicable at State U., come directly under the administration of the Board of Regents. Applications for them should be made to the Bureau of Examinations and Testing, State Education Department, Albany 1, N. Y.

## Model Hobby World

(Continued from page 41)

Marston Gardens, Luton, Beds., England. (That "Beds." means "Bedfordshire.")

**Big Brass at R.A.F. Meet.** When the Royal Air Force model meet was run off last season in England honors were pretty much divided between enlisted contenders and officer modelers. Present were the Commanders-in-Chief of the R.A.F. Fighter and Bomber Commands, Air Chief Marshal Sir Hugh Lloyd and a shining collection of other top R.A.F. "brass." Said fighter commander Air Marshal Sir Dermot Boyle while commenting on various aspects of the big competition (over 200 service men entries): "Two things impressed me—the ability of a model to be repaired from what appeared to be Category 3 (almost a complete wreck) to being fully serviceable and in the air in a matter of minutes; the other is the tremendous enthusiasm of all the competitors." He also admitted one job he'd not like to have—helper to a contestant. "Such fellows seem to spend all their time running downwind and never getting back in time for anything important!"

**Odd Items.** From Frank Zaic recently returned from an extensive West Coast trip we discover that the Munitap Foundation, Inc., which is offering substantial cash awards for winning papers from free fighters and soaring pilots on subject of "upcurrents" is made up of a group of public-spirited mining concerns who have set aside funds to promote scientific investigation in various fields. And Munitap—which we have a deuce





# Hobby Shop Directory

**Model Builders! Here's a listing of the nation's leading hobby shops. You'll want to file it away—and when you're in the neighborhood, drop in and browse around. They're expecting you.**

## CALIFORNIA—CULVER CITY

New Location, Larger stock, Offstreet Parking, Same friendly service since 1935.

Open Weekdays 10-6  
Mon. & Fri. Eves. 7-9

**PICO MODEL & HOBBY SHOP**  
5407 Sepulveda Blvd. EX 8-9913

## MASSACHUSETTS—CAMBRIDGE

Model planes, motors, railroads, ships and accessories.  
9 to 6 daily and Thurs., Sat. evenings.

**CROSBY'S HOBBY CENTRE**  
1704A Mass. Ave. KI 7-4389

## NEW JERSEY—PARSIPPANY

The Town of All Hobbies—  
30 mins. from N. Y.  
Open 7 days—All day Sat., Sun.  
Flying fields available  
Buy 'em—where you fly 'em.

**RICH'S HOBBYTOWNE, INC.**  
Route 46 Boonton 8-2666

## NEW YORK—BROOKLYN HEADQUARTERS!

Everything for model airplane builders.  
Accessories our specialty.  
Engines, parts and service.  
Complete U-Reely Service.  
Everything Advertised in Air Trails  
HOBBIES For Young Men

**PARK HOBBY CENTER**  
8120 Seventh Ave. Shore Rd. 5-2972

## NEW YORK

Labor-free silk covering for models purchased here. Authorized ESSCO R/C dealer in this vicinity.

**MERMAID HOBBY CENTER**  
2410 Mermaid Ave. CO 6-5838

## NEW YORK—BRONX—WEST-CHESTER

Specializing in R/C for Hobbies  
AUTHORIZED DEALER FOR  
ESSCO R/C PRODUCTS  
IN THIS VICINITY

**W. H. ELECTRONICS—MODELS**  
673 Elton Ave. LU 5-6705  
Cor. 153rd St. & 3rd Ave.

## NEW YORK—JAMAICA (3)

HOBBIES—THAT'S ALL!  
HOURS: 10 a.m. to 8 p.m. daily  
Mon. & Fri. 10 to 10 p.m.  
Saturday 9 a.m. to 8 p.m.

**JAMCO (Jamaica Co.) Hobbies, Inc.**  
179-29 Hillside Ave. JA 3-9140

## BROOKLYN

Labor-free silk covering for models purchased here. Authorized ESSCO R/C dealer in this vicinity.

**MERMAID HOBBY CENTER**  
2410 Mermaid Ave. CO 6-5838

## NEW YORK—NEW YORK DEALERS

Tell the local hobbyists about your shop in this inexpensive way.  
For details write to:

**Air Trails HOBBIES For Young Men**  
575 Madison Ave. PL 9-2080

## NEW YORK—LEVITTOWN & HICKSVILLE

Model Airplanes, Radio Control, Boats, Trains, Art Supplies. Complete Stock.  
For beginner and expert alike.

**PAUL PLECAN'S HOBBY SHOP**  
West Village Green LE 3-7379

## NEW YORK—FLUSHING—LONG ISLAND

Specialists in R/C For Hobbies  
We Carry the Largest Stock of Radio Control Specialties on Long Island

**L. I. ESSCO R/C PRODUCTS**  
138-18A Northern Blvd. IN 3-2684

of a time pronouncing—is really “platinum” spelled backwards.

ATH/FYM (that's us, you know) spelled backwards is “myfhta”—about that only thing we can make of that is “mighty fine features hurled towards ya”—each month, that is. Never mind, send platinum, we can use some anytime.

—The Dopester

## WESTERN ROUND-UP

**Travelin' Man.** This past month has been a very busy one—we took in four contests, traveling nearly two thousand miles. The meets were the San Diego CRA meet, San Francisco Mustang R/C boat contest, San Valleys Annual Dry Lake Contest and the first San Joaquin Valley Contest.

**San Diego Shindig.** First was San Diego which found an upset in that Webb Hill and his single control, rudder-only R/C model beat out the multi-control boys. On the docket were really different contests, one for U-control, the other for free flight. In the first the contestants had to predict their speed for 20 laps of flying, which they did, the winner being only 1/10th of a second off. In the free flight the entrants were supposed to make three flights of 1½ minutes, the winner was the guy who came the closest, and in this case it was a Wakefield model by Fudo Takagi.

We don't know why it is but everything seems to happen at San Diego. We observed the following take place. In the combat event two contestants ended up in a tie for first, which they elected to fly off, since winning a contest by flipping a coin is not what model contests are for. The two guys cranked up their ships and started off. From the very beginning one fellow was completely on the offense with a fast Torp .35 job; after around a minute of flying, number two decked his ship in evading an attack but luckily all he did was break a prop. Number one kept flying, with less than a minute of the five minutes left, number two got back in the air and

(Continued on page 96)

## NATIONAL COMPETITIONS FOR YOUNG MEN

### Thousands of Dollars in Cash, Scholarships and Trips

▶▶▶▶ 20th Annual National Essay Contest sponsored by the Ladies Auxiliary to the Veterans of Foreign Wars. \$2,000 in cash awards (1st prize, \$1,000 and gold medal) to high school students for best essays not over 1,000 words on subject “What Civil Defense Means to Me.” Also local and state awards. Contestants first submit entries to local Auxiliary, which submits to State Auxiliary; National winners chosen from State winners. Deadline for local entries is March 15, 1955. If there is no local Auxiliary in your town, your school or town paper may act as sponsor. Have them contact National Headquarters of Ladies Auxiliary to the Veterans of Foreign Wars, 406 W. 34th St., Kansas City 11, Mo.

▶▶▶▶ National High School Essay Contest sponsored by Advertising Federation of America and local member Clubs. Grand Prize \$500 and free trip to Chicago to attend Federation's convention June 5-8, 1955; other cash awards plus local prizes. Essay must not be over 1,000 words on subject “How Advertising Affects Our Lives.” Contest restricted to those cities and areas having member Advertising Clubs, which conduct local contests that in turn lead to national contest. Contact local club for its closing date. Nat'l contest closes April 18.

▶▶▶▶ 11th National Traffic Safety Poster Contest sponsored by the American Automobile Association, Washington, D. C. and affiliated AAA clubs. Open to any school student, any grade, with cash prizes totaling \$3,175 awarded to three separate age groups: elementary, junior high and senior high. Closes March 9, 1955. Full details from National Poster Contest, American Automobile Association, 1712 G St., N.W. Washington 6, D. C.

▶▶▶▶ 8th Annual High School Essay Contest sponsored by National Sales Executives, Inc. Boys' division: \$1400 in cash prizes for best essays not over 1000 words on subject “Selling as a Career.” (1st Prize \$1,000 and all-expense trip to NYC.) Closing date for these national awards is April 1, 1955.

▶▶▶▶ Industrial Arts Awards annual competition sponsored by the Ford Motor Co. More than 1500 individual awards valued at \$50,000 are given each year. Open to school students in grades 7 through 12 enrolled in shop, drawing or printing courses. For information write Industrial Arts Awards, Ford Motor Co., 3000 Schaefer Road, Dearborn, Mich.

▶▶▶▶ National High School Photographic Awards open to any high school student. Total of 256 prizes amounting to \$5,000 in cash. Ends March 31, 1955. Details on entering from National High School Photographic Awards, 343 State St., Rochester 4, N. Y.

▶▶▶▶ Fisher Body Craftsman's Guild sponsors car design and model building contest. \$20,000 in scholarships plus numerous state and regional awards. For details write Fisher Body Craftsman's Guild, General Motors Bldg., Detroit 2, Mich.

▶▶▶▶ First annual competition for papers on “Upcurrents” offers a total of \$400; sponsor is the Muntalp Foundation, Inc.; the American Meteorological Society and the Soaring Society of America are cooperating agencies. Deadline for entries is May 1, 1955; inquiries should be addressed to Dr. Paul MacCready, Jr., 1202 E. Green St., Pasadena 1, Cal. Glider pilots and free flight modelplane flyers are in a unique position for making appropriate observations, but anyone may enter.

▶▶▶▶ 7th Annual National Employ the Physically Handicapped Essay Contest. \$2,000 in cash prizes (plus transportation and expenses to Washington, plus local prizes or scholarships). Closes March 15, 1955. For details write to the sponsor, The President's Committee on Employment of the Physically Handicapped, Washington 25, D. C.

▶▶▶▶ Fourth Annual Science Achievement Awards for Students, conducted by Future Scientists of America Foundation and sponsored by American Society for Metals. Program of 104 awards totaling \$5,000 for projects in science and mathematics, and open to any student in grades 7 through 12. Three divisions according to the grade you're in, and you compete only with other students in your geographical region. Closes May 15, 1955. (There is also a program with \$1,000 in Recognition Awards for Science Teachers, the closing date for these being Feb. 15.) For information, write to Future Scientists of America Foundation, 1201 16th St., N.W., Washington 6, D. C.



SEE MORE GYRO SPECIALS PAGE 84!  
TRANSMITTER, RECEIVER & ESCAPEMENT including Tubes & Relay. No License Required.

**GYRO PRESENTS 2 NEW KITS**  
A Powerful 4.5 Watt Transmitter & Super-sensitive Receiver for 27 1/4 Mc. Radio Control. NO KNOWLEDGE OF RADIO NEEDED TO GET WORKING. FREE with above BERKELEY Escapement.

**\$9.88**

Long-life RK-61 Tube in stock for GYRO Kits  
**AUDIO TONE MODULATOR**—Plugs into Transm., gives audio signal, tested, with battry. \$7.95; Kit \$5.95.

New! 6 V. VIBRATOR SUPPLY, only 3 1/2" x 1 3/4" x 4 1/4", delivers 135 V. @ 30 Ma.; 11 1/2 V. to 300 Ma., operates from NT6 Battery. NOT A KIT \$5.95.

Most Powerful Hand Held Transmitter, only 8 1/2" x 3" x 9 1/4". Has twice range of weaker sets. Complete, ready to operate, less battry. \$16.95; Complete Kit with tubes, crystals, antenna \$11.95.

**GYRO 6 REED RELAY**—for 6 controls—diagr. \$14.95

**GYRO 6 TONE MODULATOR**—converts any transm. for 6 separate controls, complete, assembled, tested \$11.45; complete kit \$8.45

**NEW! FIELD STRENGTH METER KIT**, with crystal & wound coil \$1.35

with 0-3 Ma. Meter, \$3.75; wires & tested, add 1.00

New! 2-6 Volt Battery Charger, wired & tested. 6.95

**BATTERY CHARGER KIT**, 2-6 Volts. 4.95

**STORAGE BATTERIES**

BB54-A, 2 Volt, 3"x4"x5 1/2"—27 Amp. Hours. 2.75

MT6, Mini, 6 volt, 2 1/4"x1 3/4"x3 1/2". 2.45

**CHARGER FOR DRY BATTERIES**. Use 1 set of A & B's all season! Recharges all 1 1/2 to 90 Volts 6.50

**VIBRATORS**, 6 Volt \$1.35; 2 Volt Synchronous 1.00

**METERS**: Accurate 2" sq. 0-1 Ma. 3.65

0-3 Ma. \$2.75; 0-3 Ma. \$2.95; 0-50 Ma. 2.75

**FLEAWIGHT HOOKUP WIRE**—25 Ft. (5 colors) .25

**6 VOLT DYNAMOTORS**, with Shockmount base, 250 Volts/65 Ma. or 180 Volts/100 Ma. 7.95

**SIGMA 4F RELAY COILS**: 3,000 or 10,000 ohms 1.10

**SOCKETS**: mini, hearing aid, 4 or 5 pin. .15

mini, 7 pin. 10c; Lokalt or octal. 25c for 2

**PLUG & SOCKET**, 3 or 4 pins, pr. .15 5 or 8 pin, pr. .25

**SAFELITE BOARDS** for Receivers, 25c; RF CHOKE .20

**SWITCHES**: Toggle SPST. 30c; Slide Switch .15

**KEYING SWITCH**, remote new micro "click" type .55

**METER JACK**, open circuit. .30

Closed circuit. 35c; **PLUG** for jacks. .35

**MINI PLUG & JACK**, for metering, etc. .15

**POTENTIOMETER**, mini 10,000 or 25,000. .40

**POT.**, dime size, 10,000-25,000 ohms. .85

**CONDENSERS** and **RESISTORS**, most sizes. .10

**CERAMIC TRIMMERS**, 3-30 mmf. or 7-45 mmf. .35

**PADDER**, For Simple Single or Mini Mac Sets .60

**VARIABLE CONDENSER**, air type, screwdriver shaft, 100, 125 mmf. .70; 15, 25 or 50 mmf. .40

**RECEIVER PLATE COIL CTC**, with adj. iron core .25

Wound for Lorenz, S. Single, Johnson, Mini Mac .50

**NEW TUBES**. All Types Available—LOWEST PRICES

All Gas Tubes

XTALdiode \$ .75 XFG-1 \$3.20 3A5 \$1.25

154 .90 1V5 .190 3B4 1.85

155 .90 3A4 .95 354 .85

1U4 .90 304 1.10 3V4 1.05

1U5 .90 3D6 .80 Transistor 3.50

**GYRO ELECTRONICS CO.**

325 Canal St. New York 13, N. Y.

**AIR TRAILS HOBBIES FOR YOUNG MEN**

**FULL SIZE PLANS**

**Group No. 255 50¢**

ENCLOSE COIN OR MONEY ORDER

**CHASE C-122 Avitric** by Dick Atkins. A superb twin-engine flying scale control line model of easily-duplicated configuration. Takes to Half-A or small Class A engines. Three foot span; 23" overall length.

**SWEDISH BUTTERFLY BOAT** by Ted Alexander. Handsome, boom-less, twin-sail boat patterned after new designs from Sweden. Overall height, 30"; overall length, 18"; beam, 3". Easy, layered hull construction.

**SEMI-SCALE FLOATS FOR RADIO CONTROL MODELS** by Chuck Hollinger. This set was designed for his scale Cub J-3, but can fit a variety of free flight and R/C model planes. Scaled 2" to foot; overall length, 30"; width, 4 1/4".

**MINI-MISSILE** by Stephen L. Snyder is 40" span F-51-like semi-scale pint sized radio controlled plane for power plants like Cub .075 Diesel. Overall length, 27 1/2".

**FOR SPECIAL HANDLING** Add 9c per plan—1st class mail

Add 18c per plan—Air mail

**NEW ENLARGED, 24 PAGE DESCRIPTIVE CATALOG 9-4 ENCLOSE 10c TO COVER HANDLING.**

**HOBBY HELPERS**

770 HUNTS POINT AVENUE

NEW YORK 59, N. Y.

# HOBBIES'



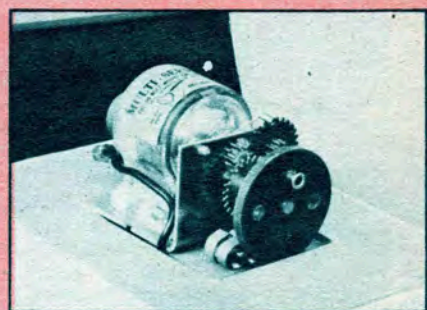
For twin-lens reflex cameras, Kalart has a new B-C (battery-capacitor) "Coil-flash" Model BC-400 with built-in extension cord and safety shield. Opening the shield after exposure automatically ejects hot used flashbulb. Die-cast platform attaches to tripod socket of reflex camera. For cameras with synchro-mesh shutters BC-400 is \$24.95, less battery.

The Kalart Co., Plainville, Conn.



Splendid booklet on "HO" gauge model railroading is this little 16-page affair. Designed to appeal to professional men, it tells the HO story simply yet in an interesting manner. Pictures and text. Sections include "Miniature Locomotives," "Brief-Case Railroad," "Living-Room Railroad," "Where to See More." Send 6¢ in stamps for copy.

Eastern Model Railroads, Box 4290, Philadelphia 44



Multi-Control actuator is this Model 3PN by deBolt. Outfit now has its multi-servos (motor-driven radio-controlled units) available in four models: 2PN (\$11.95), 2 positions with automatic neutral for single control operation; 3PN (\$14.95), like 2PN plus 2nd servo circuit added; 2P2N (\$11.95), 2 positions with 2 neutrals; 3P (\$10.95), 3 position.

deBolt Model Eng. Co., Williamsville, N. Y.



How a radio works no longer puzzles these two. They receive and send radio messages on a set built by themselves from an "American Industry" kit produced by the Radio Corp. of America. Parts of a 2-tube rcvr and a transmitter as well as materials for many experiments plus a book, "The Story of Radio—How It Works, What It Means."

Industrial America, Merchandise Mart Plaza, Chicago 54



Wonder material indeed is fiberglass and modelers are finding more and more use for it. Comes now a kit with cloth, resin and all the necessary materials from Midwest Products packed especially for modelers. The \$4.95 kit contains a half-pint of polyester resin, hardening solution, mixing sticks and cups, eye dropper, instruction sheet and two grades of cloth.

Midwest Products Co., 6005 E. Dunes Hy., Gary, Ind.



# SHOWCASE®

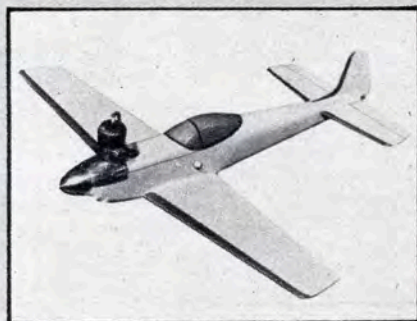
Excellent gift items for the young or old angler are the six fishing lures you can make from this Pastime kit: mouse, popper, darter, wobbler, underwater plug and metal spoon. Suitable for bait-casting or spinning in fresh or salt water. \$3.98 kit contains wood bodies, hooks, screw eyes, washers, metal lip, split rings, glass eyes, brushes, paint, instructions.

Pastime Products Co., 40 Newkirk Plaza, Brooklyn 26, N.Y.



Return of an old friend is the reappearance of Top Flite's "Zing!" 23½ in. wing-span control line semi-scale flyer. Designed by Carl Goldberg, the plane takes engines from .19 to .49; fuselage length is 22 in. Prefabbed kit sells for \$4.95. Top Flite stopped advertising this job for awhile, still found that order after order came in, so it's back in stock.

Top Flite Models, 2637 S. Wabash Ave., Chicago 16



Handbook on R/C is Berkeley's 72-page "Radio Control for Model Aircraft and Boats" which sells for \$1. Edited by Bill Winter, the 6 x 9 inch compendium contains much material that already has appeared in various publications including ATH/FYM, yet is still a valuable working partner for the beginning R/C'er. Eleven chapters; one on model boats.

Berkeley Models, West Hempstead, N. Y.



Most realistic wheels we've seen are these 1-9/16 inch diameter plastic hub and spoke, rubber tire models by Saunders-Swadar. Hub, rim and spokes are in two sections (inside and out) which can be removed from the tire. Tire has realistic tread and markings. These plastic "wire" wheels come packed 5 to a set and sell for \$1.20. Hub opening ¼".

Saunders-Swadar Toy Co., Aurora, Ill.



Rock Detective Kit #1 produced by the Gemological Institute of America includes 24 rock and mineral samples, plus a geologist's hammer pick, magnifying glass, notebook, gummed labels, identification charts and a book which tells the exciting story of geology. Assisting were the Chicago Museum of Science and Industry and the Encyclopedia Britannica.

Industrial America, Merchandise Mart Plaza, Chicago 54



## NINE NEW OUTBOARDS



Chris-Craft's 18' Outboard

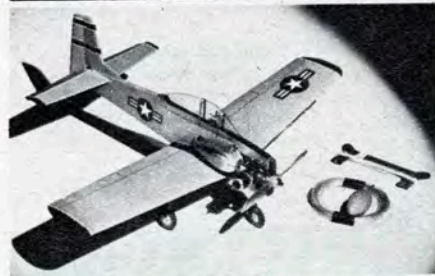


Chris-Craft's 17' Outboard

Nine new outboard construction kits now available at all dealers. All an inch to the foot scale or larger. Actual large boat construction, framed hulls planked. Each kit complete with cement, decals, metal fittings, blade, sandpaper etc. Chris-Craft's 21' Monterey Cabin Express Cruiser at \$3.95. Chris-Craft's 17' Speed Boat at \$3.95. Chris-Craft's 18 foot Express, 18" long at \$3.95. Chris-Craft's 14' Hornet runabout, 17½" model at \$3.95. The new 16" "APACHE" conventional step hydroplane at \$2.95. Chris-Craft's 28' Cruiser, 25' Express, 21' Sportsman, 21' Express now show outboard motor installation as well as inboard. WRITE for literature on 18 boat construction kits—\$2.95 to \$9.75, sixteen-inch to thirty-five-inch models.

## DUMAS PRODUCTS

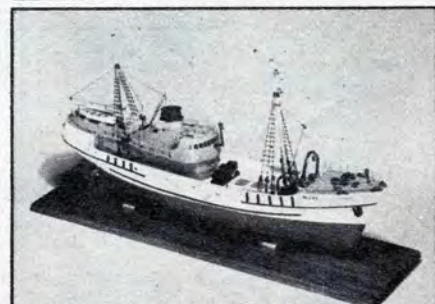
2114 S. Alvernon, Box 6096, Tucson, Arizona  
1944—World's largest manufacturer of power boat kits—1954



## Jim Walker "FIREBEE" NEW! Remote Control Throttle

provides a self-learning plane you can take off and land at will—a plane you can fly slowly, quietly, without dizziness. You can shoot landings with the "Firebee," hover in mid-air, land and taxi in, refuel with the engine running, take off again! COMPLETE KIT INCLUDES fuel tank with "anti-stall" reservoir and filter, smooth-finished parts, U-Control handle, flying lines, prop, canopy, landing gear, wheels, hardware, decals, flying course, Jim Walker "Firecracker" Engine with \$14.95 New "Power and Silencer" at your dealers.

JIM WALKER A-J AIRCRAFT CO.  
1166 N. E. 31st Ave.,—Portland 12, Ore.



## HILDINA Motor trawler 1951

A beautiful modern fishing trawler repeat with neat features. The model is on ¼" scale, giving a hull 17" long. Special castings for the main windlass, anchor windlass, trawl galleys, compass, anchor, etc. Both the hull and the cabin are machine carved from hardwood. Brass turnings, cordage, wood parts, blocks, deadeyes, etc. for the complete model are furnished.

Two sheets of plans by Herb Scott, and instructions with kit as described above to M-S standards .....\$19.00

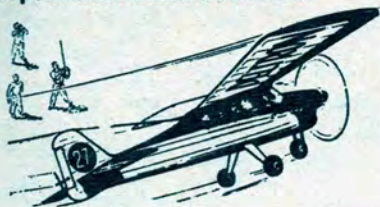
See it at better hobby dealers, coast to coast. Send 25¢ for our new catalog, published in October.

## MODEL SHIPWAYS

39 West Fort Lee Road Bogota, N. J.



## Dependable RADIO CONTROLS



# DELTRON

**PERFORMANCE  
GUARANTEED!**

**R 100  
RECEIVER**



Here's your dream of dependability; does away with repeated adjusting, tuning and testing. Weighs only 2 oz. including plug. Size 3" x 1 1/2". Rugged. Engineered to "take it." Complete, fully assembled of new, top quality components. **\$24.95**

**T 100 TRANSMITTER**

3-watts+ power packed into a light easy-to-carry 3" x 5" x 7" case. Micro-action keying button, telescopic antenna. Complete with tube, and crystal, less batteries. **\$29.95**

24-hour Service Write Today

# DELTRON CO.

1940 CONQUISTA AVE., LONG BEACH 15, CALIF.

## KOREAN BATTLE TANKS

USA  
Gen. PATTON  
13" Long

Designed  
From Info  
and Photos  
Supplied by  
U. S. Army  
Ordnance



11 1/2" Long  
USA PATTON '48

**\$2.95  
EACH  
PLUS 25¢ POSTAGE**

12" Long  
USA T41 'BULLDOG'

11 1/2" Long  
USA Gen. SHERMAN

12" Long  
German 'Tiger'

14 1/2" Long  
Russian 'STALIN'

### WITH ROTATING 'ACTION' GUN TURRET

A complete line of Korean and World War II battle tanks by MERCURY. Simple construction from full-size plans. Build authentic models for your den or library. SCALE: 1 inch equals 2 1/4 feet.

FEATURES: DIE-CUT BALSA PARTS • LIGHTS ROTATING TURRET • METAL AIR VENTS AND GRAB IRONS • PLASTIC PARTS • DECALS • FORMED BOGIE WHEELS • SHOVEL AND PICK AXE CONTOUR SHAPED BALSA • FULL-SIZE PLANS

AT ALL DEALERS—If Out of Stock Order Direct

**MERCURY MODEL**

920-A2 UTICA AVENUE • BROOKLYN 3, N. Y.

# HOBBIES'

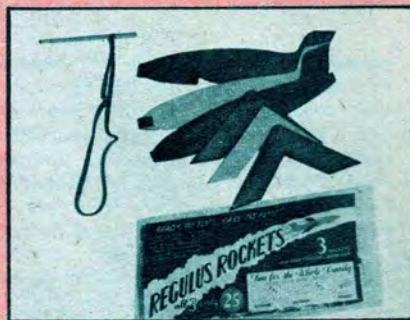
Forecast weather scientifically with this kit! That's what Taylor Instrument Co. says you can do since the kit includes materials to make a barometer, cloud speed and direction indicator, hygrometer, maximum-minimum thermometer, compass, ground wind direction and velocity indicator and a rain gauge. Booklet explains how to observe and forecast.

Industrial America, Merchandise Mart Plaza, Chicago 54



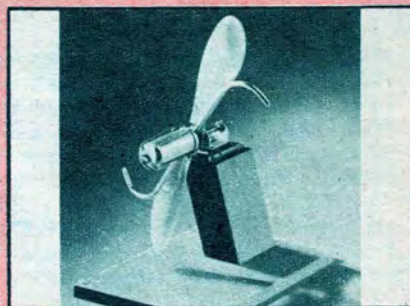
Regulus rockets, profile models of guided missile, can be used in competition for distance, altitude, aerobatics and target accuracy. They're flown by a rubber catapult launcher. Kit consists of 3 die-cut balsa wood red, yellow and blue colored models. Sells for 25¢. Ready for assembly. Information instruction sheet is included in the kit.

American Telasco, 166 Spring Rd., Muntington, N. Y.



No other model engine is like the Turb-O-Prop according to the Dempster Co. of Kansas City, and we certainly agree. You load standard Jetex fuel capsules into the airtight chamber, light the fuse which ignites the fuel. Gas from the burning fuel is forced out through the jet-like prop tubes, making the prop revolve at high speed. Cost is \$3.98.

Dempster Co., 107 Clinton Pl., Kansas City, Mo.



Pocket-size, yet receives up to 1,500 mi.—that's how Western Radio describes its deluxe pocket radio. According to the manufacturer the kit can be assembled in 1 hour; includes tube and all parts for \$3.49. Receives on 540-1600 kc band locally without an antenna. Batteries are extra (\$1.15); headphone is \$1.69. Hearing aid earset available for \$4.95.

Western Radio, Box 1526, Sacramento, Cal.



Aristo-Rev electric motor is tiny battery operated powerplant for powering models and for use with radio control equipment. It draws only 1/100 ampere. With ball bearings it weighs only 2.25 oz. It measures 2 1/4 inches in length and is 1 inch long. Sells for \$3.50. Ultra efficient motor operates almost 50 hours on a pair of ordinary flashlight batteries.

Aristo-Craft, 184 Pennsylvania Ave., Newark 5, N. J.

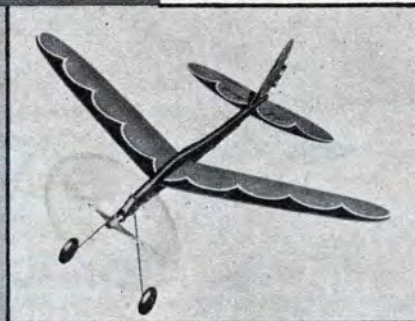




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A-J Aircraft, 1166 N.E. 31st Ave., Portland 12, Ore.



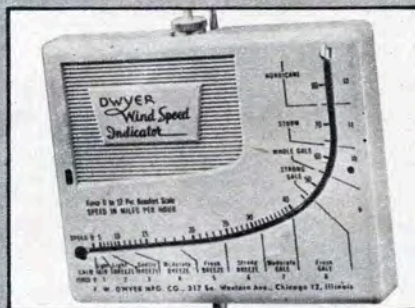
Principles of light rays and study of the skies go hand in hand with this home-built telescope kit by the American Optical Co. Kit includes lenses, mirrors, prisms, color filters, optical bench and light source. Illustrated book "First Adventure in Optics" describes light experiments as well as ways to build four types of telescopes, 2 microscopes, periscope.

Industrial America, Merchandise Mart Plaza, Chicago 54



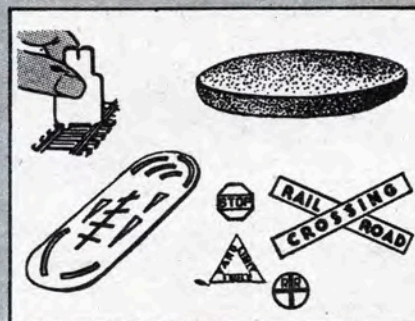
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Dwyer Mfg. Co., 317 S. Western Ave., Chicago 12



Money savers from America's Hobby Center are these items illustrated: track gauge, track cleaner, layout template drafting guide and scale signs. These and many more are part of a special continuing sale on model railroad items featured by AHC. An inquiry to the company will bring you news on many more items including paints, rheostats, meters.

America's Hobby Center, 156 W. 25th St., NYC 1



Largest all-plastic airplane assembly kit ever produced is Aurora Plastics' claim for their Martin Marauder (World War II B-26) kit. \$2.59. Wing span is 18½ inches, fuselage is 15¼ inches. Kit contains 42 pieces. Illustrated literature is available from Aurora on MiG-19, F6F Hellcat as well as the many other "Famous Fighters" kitted in plastic.

Aurora Plastics, 44 Cherry Valley Rd., W. Hempstead, N.Y.



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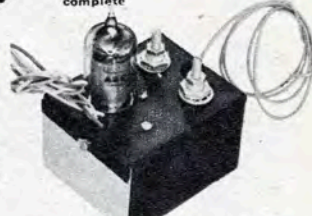
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(Continued from page 91)

on the defensive again, then with less than 15 seconds left the lines got tangled and number one-decked, but the ship was still flyable. Number two was awarded first prize because he was still flying even though he spent less than two minutes in the air and was on the defensive 90% of the time. This to us didn't make sense, especially since he had not even been in the air during half his flight time—is it right?

**El Mirage Meet.** The San Valleers contest this year was at El Mirage, home of Gus Brigleb's glider school. This dry lake is even larger than Rosamond and is harder packed.

Night flying started early; it was soon noted that air and models were teaming up for some excellent flying. Ronnie St. Jean did two five pluses only to have his lights go out on an over-run on his 3rd and lose the model. Sal Taibi posted consistent 4-min. plus flight to be the early leader. A monster by Brad Broadwell posted an 8-min. out of sight flight on 22 seconds of engine run; this ship had 20 sq. ft. of area and was making VTO with an Orwick .65. All in all flying was very good that night, fuels needing more nitro as more than one modeler had difficulty starting and keeping engines running. After more than 4 hours of flying and Sal Taibi's early time of 13:30 plus holding up, it was to the sleeping bags on a real cold night. Up early in the morning to bacon, eggs, oh, man—hot coffee. Toshi Matsuda had brought up a pickup truck loaded with wood and every time we got cold and threw on another blanket, there were guys building up the fire—don't know whether they went to sleep or not.

The contest started hot and heavy again the next morning, Taibi and Broadwell posting high times by 9 o'clock. Ronnie St. Jean also posted a high A time. The weather was swell, wind 2-4 mph almost all day, most of the time swinging around, changing directions, which made for a lot of down. Sal Taibi continued his swell early flying all day long and ended up as sweepstakes winner, using all classes of Spacers and his A PAA load model.

**Valley Competition.** Up at the San Joaquin meet we found flying such as we had never seen before. In Class B we totaled 11:43 and ended up in 23rd place. The site where the contest was held was a new one and it is one of the best around, a large expanse of flat pasture land. The take-off area had been smoothed over and for once (other than at the lakes) there was plenty of take-off room. Best all-around flying of the day was again by Sal Taibi who walked off with open sweepstakes, while Bobby Patchin was winning junior. Ron St. Jean put up the longest flights, 3 sixes and a 9 plus in Class A. Incidentally, the impetus FAI has given class A has been well proved in the last 3 meets, where Class A and those 15's have had more entries than 1/2A which used to be more than double any other entrants.

VTO's are getting popular what with Brad Broadwell's "Monster," Mahieu and his FAI Kiwi, Mark Tackett and his "Sun Amazon Duster" and others employing this new type of take-off. Most guys merely cement 1/8" dowel stringers (to provide the necessary 3 points) to the trailing edge of the stab in two places and to the rudder in one place. Convair's very successful flights with the Pogo and the newspaper account of these flights have made the modeler very conscious that it must be "legal."

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While every precaution is taken to insure accuracy we cannot guarantee against the possibility of an occasional change or omission in the preparation of this February 1955 index.



We received an advance draft of the proposed PAA rules and were very pleased with them—so pleased that we had to contact other modelers to get their reaction. They'll be completely covered in the forthcoming "Air Trails Model Annual for 1955" (on sale February 3rd).

**R/C Boats.** The San Francisco Mustangs R/C boat contest took place in what proved to be ideal waters for such an event—Spreckles Lake in San Francisco Park. When we arrived on the scene, they were all set up and several boats had already made practice runs. Our eyes were immediately taken by some beautiful 4' to 6' boats which were lined up on the bank along the water's edge, since even at a distance they looked super; at close range we were amazed to see the painstaking detail which some of these builders put into these boats. Most of the fittings had been handmade, polished until flawless and in a lot of cases chrome plated. There were 4 cylinder/4 cycle engines, 2 cylinder/4 cycles, 1 cylinder/4 cycles, steam engines, etc., and in all cases they were completely home made as were the screws, universals—it was amazing.

By far the most eye catching was the steam-powered tugboat "Consultor II" owned by H. C. Free and Ed DeGear. The boat was modeled after a New York City tug boat and built during the late '30's. This model was 6' long and weighed 135 pounds. The two cylinder steam engine, completely home built, used water which it pumped from the lake. It had a Rockwood 5 channel rig for right, left, forward, reverse, and a real honest steam whistle. The boat itself was constructed mainly from teak, pine and mahogany and various metals. This boat had plenty of power, too—pulling two men in a rowboat with ease!

Free and DeGear had three other boats at the contest, "Lynn" with a 52" PT hull weighing 60 lbs. and powered by a 4 cylinder/4 cycle engine, "Margie" 2 cylinder and Mick II, 5' long and powered by a one cylinder/4 cycle engine.

Art Ellsworth started with a Sterling kit for his Chris-Craft Catalina, then went to work for 3 months, filing and polishing fittings from solid brass, 22 coats of Dulux hand rubbed—prettiest boat at the contest. Inside, it had a Macnabb 27 receiver, E. D. clockwork escapement, Mac .19 for pulling along the 7 3/4 lbs. of boat. Art had a water cooled engine which was very ingenious. Using a 3/32" piece of brass tubing in back of the screw, he picked up water and passed it along through a piece of plastic gas line, into 1/8" copper tubing wrapped around the Mac cylinder, then into the exhaust tubing he had fastened to the engine, so that exhaust and water were dumped out the same fitting in the hull. The arrangement of the batteries, escapement, receiver wiring and engine was the neatest arrangement we had ever seen.

Virgil Gustavino had a boat he called Anna I; she was 52" overall, weighed 33 pounds and was powered with a water cooled Forster .99 ignition. The PT hull was built of cedar, the deck of mahogany, with his own design superstructure. All the fittings on this boat were also home made. Virgil had done a masterful job on the entire boat.

They had four events on the agenda, which made for a very busy day indeed. They had a scale event where the boats were judged for realism and maneuverability, a precision event where the boat had six minutes to pass through 16 traps, a speed event where the boats had to do two laps around the precision course and

a free running non-controlled marathon race where boat and contestant each at the same time had to do one lap around the lake!

The winners of the various events were as follows: Scale—"Consultor II" by Ed DeGear and Henry Free; Precision—Ralph Stevenson; Speed—Al Deshaies; Marathon—James Stribling, who was almost as fast as his boat but—we do not believe he could have made another lap while his Atwood outboard was still raring to go.

We liked a closing comment by Bill "R/C Speed" MacKerracher, who said, "I personally know nothing about boats and wasn't supposed to have anything to do with the contest except buy the trophies for it, but at the last moment the contest committee went haywire and the whole thing was dumped in my lap. The committee handed me five sheets of paper with a few rules and a map of the course on them and told me to put on a contest, so I did the best I could with what little I had to work with." From the way the contest was run, you would never have known that this was the set-up, for Bill picked 3 or 4 good reliable men and put on a classy competition.

—Dick Everett

## SOUTHERN SCENE

**R/C on Upswing.** Radio control in this area created much interest last year and has added many new flyers to its fraternity. This surge to R/C hasn't slackened at all; in fact, the number of flyers has doubled in the past 12 months.

Al Pinson, of Atlanta, noted R/C man, along with a group of flyers, goes to Winder, Ga., nearly every Sunday, where they spend the day flying and exchanging their latest ideas. Ernie Gilbert, another well-known radio man, and his followers hold their flying sessions at Lockheed Aircraft Co. in Marietta, Ga. L. R. Purdy of Smyrna, Ga. has access to a spot north of Marietta where he and many other radio "bugs" spend their time flying.

I recently spoke to Al Pinson, who by the way is really going all out for the pulse proportional system. Al says he's not alone in this, either. The pulse system is spreading as radio control itself did. Al is soon to complete his new ship which incorporates this system. It is a 7" Cub similar to Alex Schneider's Nats ship. He is using Rockwood 3 channel equipment. Joe Jones, of Walco in Atlanta, has the "bug" again. Joe has just finished a new ship in which he also uses the pulse system. Bob Luecke has just completed a new "Livewire Cruiser" using Babcock 3 channel set. In the power department he is using a K&B .35. At this writing, only preliminary ground checks have been made, but he is hoping to have it in the air soon. This ship also has a symmetrical airfoil for stunt-ing.

Walter Good's Wag Modulated Tone equipment has charmed many of the R/C fellows in this area. Most of the flyers are rapidly changing over to this equipment. The R/C men say this has proven to be one of the best setups available. Ernie Gilbert and some of the other flyers have already begun using Wag equipment. Ernie is using it in his new Buzzer'd. Also, Jim Wade of Lockheed Aircraft has built an R/C using Wag. Jim has another he calls the "3/4 Wave" which is scaled up from plans of the "1/2 Wave." Showing more interest in the set itself, Forrest Cole has built a miniature Wag receiver using sub-miniature tubes which are very light and small; it has proven to be a very effective little set.

—R. H. Elliott

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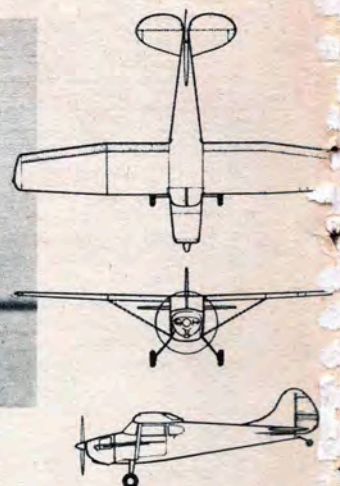
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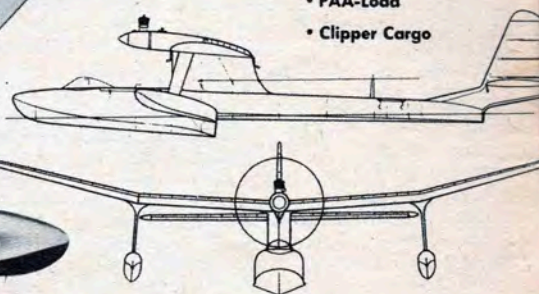
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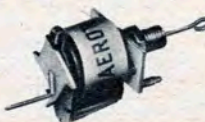
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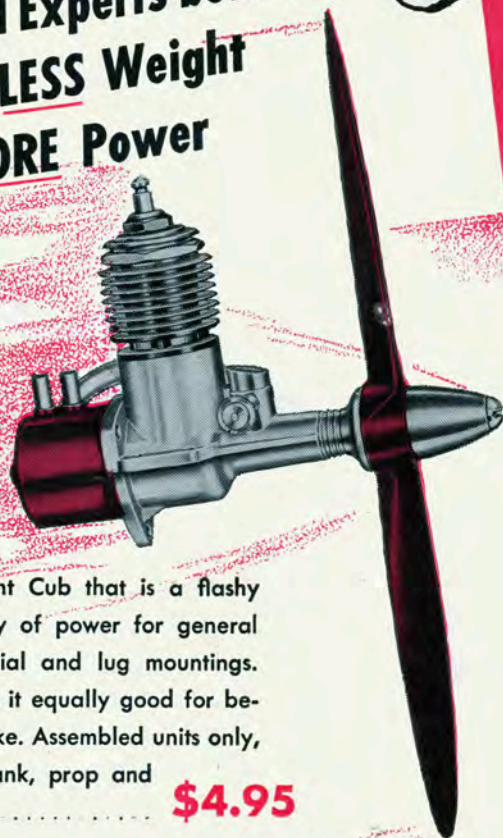
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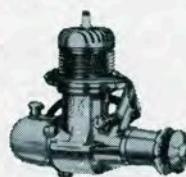
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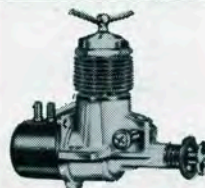
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